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- Achievement and Personality of Gifted College Students
- A High School Grading Policy
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- Editorial: They Went Thataway

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THE EDITORS SAY:

They Went Thataway . . .

Two papers delivered at the C E R A meeting, in Fresno, remind me of a story. A tramp passing a graveyard discovered he was being stalked by a phantom. He ran, and the shade close followed. Shortly the tramp threw himself on a log beside the road; the ghost sat beside him.

After a pause punctuated by the hard gasps of the knight-of-the-road, the spirit remarked, "That was some run, wasn't it?"

"Shore wuz. And after I catch my breath, we's goin' to run some more, too!"

Educational research is not unlike that bedeviled hobo. The concerns over which we repeatedly confer have a familiar ring, at least to those of us who are old enough to have attended such gatherings as the first C E R A meeting of 1922. If we were to search our professional consciences with all the humility of Christian martyrs, we might indeed build up a great burden of futility and remorse. Nonetheless, we would still have to get up and run some more. Truth is a fleeting champion to pursue or be pursued by.

We must take comfort that this truth, after nearly fifty years, is still within sight. It has not outdistanced us completely. By all odds we are a few strides closer than we were at the start of the century. And these few strides will give us confidence that we are running in the right direction, even though our pace may at times be faltering and ill-trained.

It is possible that the course we early laid out has not always been the best and shortest path to follow. Our failure, then, is not in our running form so much as it is in the poor selection we have made of the track. This we can change, which is the view expressed in Gordon's paper.

Or we can, with continued attention to our training regimen, learn how to run faster, with an improved sense of timing and pace. We can become more skillful researchers. There is evidence that we have achieved some success in this connection.

Finally, over the long course we can select more carefully the members of the team. Our own limitations may be overcome by other more youthful and vigorous runners if we devote the needed time and effort to their discovery and training.

Have I made you feel old and tired? I hope not, but if so don't forget that we have the specter on the run, too!

Auding and Psycho-Educational Variables

JULIUS M. SASSENATH AND JACK A. HOLMES

In an effort to clarify theory and research in listening comprehension, Brown (2) defines *auding* as "the process of listening to, recognizing, and interpreting spoken symbols." Auding, therefore, is subsumed with the general area of listening comprehension, but is differentiated from the comprehension of non-linguistic auditory stimuli.

The Problem

The general hypothesis investigated is that auding involves, in addition to higher mental processes, a subtle relationship to personality. The experimental results are reported in two parts: Part I deals with the relationship of auding to certain educational variables, while Part II deals with the relationship of auding to certain personality variables.

The experimental design in both parts utilizes the statistical technique of selecting from a matrix of correlations the minimum number of variables which tend to maximize the multiple correlation with the predictive criterion—auding. The criterion is assessed by the *California Auding Test* (4). The reported reliabilities of this test (4) range from .74 to .83 and compare favorably with reliabilities reported for similar instruments (1, 3, 9, 11, 12).

PART I

Relationship to Certain Educational Variables

In a factor analysis of thirty-three educational variables including several forms of the *California Auding Test*, Caffrey (4) found three basic factors: auding, reading, and interest. Part I of the present study re-analyzes a portion of Caffrey's (4) data in order to select those specific educational variables which make the maximum contribution to the variance of auding. The independent educational variables used are interest ratings in taking the auding test (4), mental ability (10), and nine subscales of the *Iowa Tests of Educational Development* (8). The reported reliabilities of these independent variables range from .89 to .91.

Julius Marlin Sassenrath is a graduate student at the University of California at Berkeley. After teaching two years in the schools of Richmond, California, Mr. Sassenrath obtained his master's degree at the University in 1954 and is now working toward the doctorate. Jack Alroy Holmes is Associate Professor of Education at the University. Before coming to Berkeley six years ago, he held numerous positions in the field of science teaching, psychology, and higher education. His doctorate was obtained from the University of California at Berkeley in 1948.

This article is an elaboration of material developed in Mr. Sassenrath's master's thesis, which was completed under the direction of Dr. Holmes.

Table I on the opposite page presents the intercorrelations of these variables as derived from a sample of 287 males and females drawn from an urban high school population. It is apparent that the criterion, *auding*, is most highly correlated with *Basic Social Concepts*, and correlates least with *Interest Rating on the Auding Test*. It is pertinent, in the light of the following analysis, to note that while the intercorrelations of the *Interest Test* are all low, the two lowest intercorrelations with this variable are with *Basic Social Concepts* and *Background in Natural Science*.

Results of Part One. Table II presents in sequence the four independent variables as they were precipitated by the Wherry-Doolittle Test Selection Method (5).

TABLE II
Multiple Correlation and Contributions to Variance of the
California Auding Test by the Educational Variables

<i>Educational Variables</i>	<i>Zero-order r with Auding</i>	<i>Cumulative Multiple Correlation</i>	<i>Contributions to Variance</i>
1. Basic Social Concepts (1) plus	.662	.662	13%
2. Use of Sources of Information (1) and (2) plus	.656	.705	18
3. Background in Natural Science (1), (2), and (3) plus	.651	.734	20
4. Interest Ratings in Auding	.314	.745*	4
Variance accounted for	55%

* Significant at the 1% level of confidence.

It may be noted that the highest initial correlation of .662, expressing the relationship between *Basic Social Concepts* and *auding*, rose to .705 when *Use of Sources of Information* was added; the R rose to .734 when *Background in Natural Science* was added, and finally, the multiple correlation reached a maximum of .745 when the variable *Interest Ratings in the Auding Test* was precipitated.

The total contribution which these four variables make to the variance of *auding* is 55 per cent.¹ It is interesting to note that the first three tests selected deal primarily with knowledge and information (8), and together account for 51 per cent of the contribution to the variance of *auding*. Thus, it appears that success in *auding* is dependent more upon knowledge

¹ Derived by multiplying the beta weights by their zero-order r's and summing the products (5).

TABLE I
Intercorrelations of the California Auding Test and Selected Educational Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. California Auding Test		.662	.651	.572	.581	.636	.581	.637	.625	.656	.314	.590
2. Basic Social Concepts			.737	.649	.748	.777	.730	.726	.713	.740	.202	.661
3. Background Natural Science				.499	.598	.632	.604	.626	.608	.609	.176	.551
4. Correctness in Writing					.640	.758	.678	.756	.783	.763	.241	.698
5. Quantitative Thinking						.660	.690	.631	.654	.691	.263	.693
6. Reading, Social Studies							.782	.854	.780	.785	.219	.686
7. Reading, Natural Science								.771	.722	.724	.251	.665
8. Reading, Literature									.801	.760	.219	.696
9. General Vocabulary										.757	.239	.753
10. Use of Sources of Information											.279	.685
11. Interest Ratings on Auding Test												.176
12. Otis, Mental Age												

TABLE III
Intercorrelations of the California Auding Test and Heston Personal Adjustment Inventory (Males)

Variables	A	S	E	C	P	H
California Auding Test						
Analytical Thinking	.384	.308	.255	.255	.278	.194
Sociality		.250	.030	.173	.101	.181
Emotional Stability			.301	.535	.244	.130
Confidence				.734	.673	.202
Personal Relations					.596	.314
Home Satisfaction						.386

and use of information than upon measures of mental age, quantitative thinking, reading, or general vocabulary. However, both knowledge and information depend upon basic mental capacities and processes! Conversely, it might also be stressed that knowledge, information, and mental processes may be somewhat dependent upon auding ability. Holmes (7) has presented an argument similar to this in relation to his findings that the elements of auditory images (intensity and pitch) underlie the L-score on the ACE test of mental ability (7, page 341).

However, still to be answered is the question, "Where is the remainder of the auding variance which is not accounted for by the above variables?"

PART II

Relationship to Certain Personality Variables

In Part I the highest zero-order r is between *auding* and *Basic Social Concepts*; therefore, it appears logical to hypothesize that since auding involves social-interaction, success in auding must also be related to certain personal adjustment variables. The picture is not so simple as the above statement would indicate. For while two other variables (Use of Sources of Information and Background in Natural Science) have lower zero-order r 's with the criterion, they make higher contributions to the variance of auding than does the test of Basic Social Concepts. Over and above the fact that there is *no significant difference in the size of these three zero-order r 's*, there is the possibility that a suppressor effect is operating (13), as is evidenced by the fact that the sequence of zero-order r 's of the selected tests do not correspond to their independent contributions to the variance of auding.

Carrying the investigation further, the *Heston Personal Adjustment Inventory* (6) was administered by one of the writers to 97 students (52 males and 45 females) selected from Caffrey's (4) original sample. This new sample was more homogeneous since selection was limited to the high school senior class. One of the major considerations in selecting this personality inventory is the fact that the manual (6) reports substantial reliabilities for each of the subscales (r 's range from .80 to .91).

The differential performance favoring the males on the auding criterion (4) and the separate norms for males and females on the six subtests of the *Heston* (6), suggests a separate multiple correlation analysis for each sex.

Results of Part II. Table III on page 101 presents the *intercorrelations* among the six subtests and auding for the male sample. It should be noted that analytical thinking correlates .38 with auding; sociability follows with an r of .31. When the matrix in Table III was submitted to the Wherry-Doolittle Test Selection Method (5) three variables were precipitated as the most efficient battery of predictors.

As Table IV indicates, when *Emotional Stability* and *Sociability* were added to *Analytical Thinking* in the selected battery, the zero-order correlation rose from .38 to a maximum multiple correlation of .43 (significant at the one per cent level of confidence). *Analytical Thinking*, it may be noted,

TABLE IV
Multiple Correlation and Contributions to Variance of the California Auding Test by the Heston Personal Adjustment Inventory (Males)

<i>Personality Variables</i>	<i>Zero-order r with Auding</i>	<i>Cumulative Multiple Correlation</i>	<i>Contributions to Variance</i>
1. <i>Analytical Thinking</i> (1) plus	.384	.362 ^a	10%
2. <i>Emotional Stability</i> (1) and (2) plus	.255	.418	4
3. <i>Sociability</i>	.308	.426 ^b	4
Variance accounted for			18%

a. The usual formula $\bar{R}^2 = 1 - K^2 (N - 1 / N - m)$ as given in Garrett (5) was changed to $\bar{R}^2 = 1 - K^2 (N - 1 / N - m - 1)$ in order to remove the chance error from each successive multiple correlation. (Personal communication with Professor R. J. Wherry.)

b. Significant at the 1% level of confidence.

contributes 10 per cent to the variance of auding. *Emotional Stability* and *Sociability* each contribute another four per cent to the variance, so that combined the three personality variables contribute about 18 per cent to the variance of auding ability for high school senior males. While the meaning of *Emotional Stability* and *Sociability* is more or less straightforward, a comment on the interpretation of *Analytical Thinking* is in order. *Analytical Thinking*, according to the manual (6), is a measure of one's tendency "to be intellectually independent, [he] thinks for himself, analyzes and theorizes a great deal, enjoys solving problems, likes carefully planned and detailed work, is persistent at tasks, and is serious"—in short *analytical thinking* symbolizes an intellectual *attitude* rather than intellectual ability.

The corresponding intercorrelation matrix for the females is not presented as all of the zero-order correlations, and the resulting multiple correlations are not reliably different from zero at the five per cent level of confidence.

In Part II then, the evidence would indicate that the hypothesis (i.e., auding is related to certain personal adjustment factors) has been substantiated for the high school males, but not for the females. Why? These data offer no bases for interpreting this differential in relation to sex. Obviously, the answer must await further research and must take into consideration sex differences in the item-bias of many variables.

Summary and Conclusion

In Part I, using *auding* as the criterion, the Wherry-Doolittle multiple correlation technique was applied to an intercorrelation matrix containing 12 educational variables. This analysis precipitated four variables, each of which makes an independent contribution to the variance of *auding*. While the four variables make a combined contribution of 55 per cent to the variance of *auding*, the first three precipitated from the matrix are Basic Social Concepts, Background in Natural Science, and Use of Sources of Information, and together contribute 51 per cent to the variance of *auding*. This suggests that *auding* ability of high school students is dependent more upon knowledge and use of sources of information than on the other educational variables used in this study. Likewise, a reciprocal action as indicated by Holmes (7) may be at work here. Interest in the *auding* test, as manifest by interest ratings after taking the *auding* test, accounted for another 4 per cent of the variance.

In Part II, using *auding* as the criterion, the Wherry-Doolittle multiple correlation technique was applied to two intercorrelation matrices (males and females), each containing six personality variables. From the matrix for *males*, the analysis precipitated three personality variables (analytical thinking, emotional stability, and sociability) which together make a contribution of 18 per cent to the variance of *auding*. For the *females*, none of the zero-order correlations between *auding* and the personality variables was significantly different from chance. This also obtained for the multiple correlation.

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(Continued on Page 124)

Achievement and Personality Test Scores of Gifted College Students

J. C. GOWAN

The study of gifted persons may be advanced by a number of different methods of approach. One of these is the investigation of how gifted people differ from their immediate peers. Deviation from the peer group appears to present a more important and less contaminated criterion than deviation from the norm. For, as Bonsall and Steffire have shown(1), when socio-economic status is controlled in a study of the personality differences of gifted children and average children, by comparing gifted children with average children of their same status level, many of the differences disappear. It becomes significant, then, to distinguish characteristics which are functions of giftedness *per se*, and not merely associated with status, financial or cultural, college attendance, community prestige, and so on. For this reason it appeared important to sample a population, itself highly selected and homogeneous, in order to determine what personality effects were due solely to an intelligence separation.

Procedure

The subjects of this study were all education majors, candidates for a teaching credential in a large West Coast university. Further information on this population is elsewhere available, (2, 3, 5, +). A majority of these people were in their last year of college; a few were juniors and about a quarter were graduate students. About five-eighths were women. From a reservoir of test battery results on a large number of such students were pulled out the 107 cases where there was a score of 160 or more on the American Council Psychological Examination (College Form, 1947). Such a cut limits the group to the highest 1 per cent of national norms for college freshmen, and to the highest 7 per cent for the population sampled. It represents a Stanford-Binet Intelligence Quotient of about 145.

Slightly different methods were used with comparisons in different parts of the study. When N exceeded 500, the means and standard deviations of

John Curtis Gowan is Assistant Professor of Education at Los Angeles State College. He was previously a counselor for the Culver Military Academy in Indiana and an observer for the American Council on Education Teacher Characteristics Study. He received his doctorate from the University of California at Los Angeles in 1952.

the gifted group were compared with the total reservoir of students, which included the gifted group as a subgroup. When N was less than 500 for the population, the gifted group members were compared with a random sample of the reservoir which may by chance have included some members of the gifted group. Both methods tended to understate differences. The basic statistics for both groups, including the critical ratios where significant at the 5 per cent level or better, are displayed in Table I. A "+" on these critical ratios in the final column indicates that the gifted group excelled significantly, a "-" that the control group excelled significantly.

TABLE I
Test Performance: Gifted College Students and Their Peers

Test	General			Gifted			Differences		
	N	Mean	σ	N	Mean	σ	Means	S.E.	C.R.
Allport									
T	1724	40.1	8.0	107	45.4	4.2	+5.4	.44	+12.4
E	"	36.9	8.0	"	35.5	5.8	-1.4	.59	-2.5
A	"	41.7	9.2	"	41.9	4.6	+0.2	.41	
S	"	40.8	7.0	"	40.4	3.4	-0.4	.37	
P	"	39.6	6.8	"	38.7	3.5	+0.9	.36	+2.5
R	"	39.4	10.3	"	37.1	5.5	-2.1	.58	-3.6
MMPI									
L	1730	4.1	2.2	107	3.4	2.2	-0.7	.22	-3.2
F	"	3.0	2.1	"	3.0	1.8		.19	
K	"	18.7	3.0	"	18.8	4.6	+0.1	.46	
Hs	"	12.7	3.0	"	13.0	2.2	+0.3	.22	
D	"	18.5	3.9	"	18.1	4.0	-0.4	.40	
Hy	"	21.4	4.1	"	19.8	4.0	-1.6	.40	-4.0
Pd	"	21.5	4.0	"	21.1	3.8	-0.4	.38	
Mf (male)	661	27.0	5.1	60	28.5	2.3	+1.5	.36	+4.1
Mf (female)	1069	37.4	4.8	47	38.3	2.2	+0.9	.35	+2.6
Pa	1730	9.1	2.3	107	8.8	2.4	-0.3	.24	
Pt	"	25.9	4.4	"	25.4	3.6	-0.5	.37	
Sc	"	25.7	4.7	"	25.5	4.7	-0.2	.48	
Ma	"	19.1	3.8	"	20.9	3.3	+1.8	.33	+5.5
Si	1547	20.6	7.6	95	18.6	7.6	-2.0	.79	-2.5
Do	992	19.5	2.9	52	20.4	3.0	+0.9	.42	+2.1
Re	"	24.1	3.3	57	24.6	3.1	+0.5	.42	
St	"	24.5	3.3	56	25.1	3.1	-0.4	.43	
Ac	574	15.6	2.3	38	16.2	2.4	+0.6	.40	
Cardall	100	202.6	24.4	15	213.0	21.0	+10.4	6.3	
M P Fm Bd	"	46.0	8.4	58	50.3	7.0	+4.3	1.25	+3.2
M'Quarrie	"	73.9	11.8	31	83.2	10.8	+9.3	2.15	+4.2
Meier	"	100.7	7.9	34	101.2	7.6	+0.5	1.55	
Seashore Music									
Pitch	100	46.1	4.7	38	43.8	4.3	-2.3	.85	-2.7
Loudness	"	44.8	4.2	"	43.6	4.9	-1.2	.90	
Rhythm	"	27.1	2.5	"	27.3	2.3	+0.2	.46	
Time	"	39.5	4.1	"	41.2	6.4	+1.7	1.12	

TABLE I (Continued)

Test	General			Gifted			Differences		
	N	Mean	σ	N	Mean	σ	Means	S.E.	C.R.
Seashore (cont'd)									
Timbre	"	39.5	5.0	"	37.2	5.6	-2.3	1.03	-2.2
Tone Mem.	"	26.9	3.4	"	27.1	2.9	+0.2	.57	
Kuder									
Mech	100	51.7	16.4	23	62.0	14.9	+10.3	3.5	+2.9
Comp	"	26.1	13.7	"	40.0	12.0	+13.9	2.8	+4.9
Science	"	50.5	14.6	"	65.9	13.1	+14.4	3.1	+4.7
Persuasion	"	69.1	15.7	"	73.5	20.7	+ 4.4	4.6	
Art	"	57.1	16.9	"	43.5	7.2	-13.6	2.3	-5.9
Literature	"	53.4	14.6	"	57.9	13.6	+ 4.5	3.5	
Music	"	24.7	9.4	"	24.2	7.4	- 0.5	1.8	
Social Sci	"	90.7	18.4	"	85.4	22.2	- 5.3	5.0	
Clerical	"	47.5	15.2	"	47.5	14.5	..	3.4	
Morris TI	131	52.6	6.0	29	52.1	4.8	- 0.5	1.1	
Coop. Culture									
Total	100	180.9	44.5	32	270.0	52.0	+89.1	10.4	+8.5
C Soc.Pr.	"	42.9	9.5	"	51.0	7.8	+ 8.1	1.75	+4.6
History	"	33.5	12.8	"	46.0	11.2	+12.5	2.3	+5.9
Literature	"	32.5	13.5	"	50.4	19.2	+17.9	3.6	+4.9
Science	"	22.7	10.0	"	37.7	10.4	+15.0	2.1	+7.1
Fine Arts	"	37.5	14.7	"	49.8	13.8	+12.3	2.9	+4.2
Mathematics	"	16.5	10.2	"	32.5	14.8	+16.0	2.8	+5.7
Iowa	94	187.6	13.9	44	200.0	11.0	+12.4	2.2	+5.6
Minn. T S E									
Thinking	118	113.3	22.2	34	101.3	33.0	-12.0	5.9	-2.0
Social	111	134.6	20.6	34	120.8	25.0	-13.8	4.5	-3.0
Emotional	114	58.3	11.1	34	59.2	15.4	+ 0.9	2.8	
Bernreuter									
F1-C	97	-67.4	83.2	19	-69.8	95.0	- 2.4	23.5	
F2-S	98	-35.4	46.4	18	0.0	62.6	+35.4	16.0	+2.2
Bell Adjustment									
Home	125	5.62	5.5	39	4.56	4.9	- 1.06	.91	
Health	125	5.17	3.6	39	4.80	3.5	- 0.37	.63	
Social	125	7.90	6.4	39	6.66	5.0	- 1.24	.97	
Emotional	250	6.95	5.7	39	4.50	4.3	- 2.45	.78	-3.1

The scores of the 107 gifted persons on the ACE were broken down by sex as follows: 60 men had a mean score of 168.0 and a standard deviation of 2.95, and 47 women had a mean of 166.5 and a standard deviation of 2.67. The highest score, 191, was made by a woman. Women made up 42 per cent of the gifted sample and 62 per cent of the population. The critical ratio between the difference in scores of the gifted men and women was 2.8 in favor of the men. This may merely indicate that more men than women seek higher degrees.

Findings

Findings from Table I are detailed below. All findings are significant at the 5 per cent level, and those at the 1 per cent level or beyond are so stated.

1. The gifted group had higher aptitude and achievement on the Minnesota Paper Form Board, the MacQuarrie Mechanical Test, the Cooperate Culture Test total and all subscales, and the Iowa Reading Test median score (at well beyond the 1 per cent level).

2. The gifted group had lower aptitude scores in the Seashore Test of Musical Ability in pitch and timbre (at 1 per cent level).

3. On the Kuder, the gifted had higher interest patterns on mechanical, computational and scientific scales, and lower on the artistic scale (at 1 per cent level).

4. On the Allport Study of Values, the gifted were higher on the theoretical and political and lower on the economic and religious scales.

5. In personality, on the Minnesota Multiphasic, the gifted were higher on *Mf* (both sexes), on hypomania, and on dominance, but lower on lie score, hysteria, and social introversion. On the Minnesota T-S-E, the gifted were lower in thinking and social introversion. On the Bernreuter, the gifted were higher on the sociability scale (F2-S). On the Bell Adjustment Inventory, the gifted were lower (less difficulty) on the emotional area.

6. Tests which showed no significant difference included the Cardall Practical Judgment, the Meier Art Judgment, the Morris Trait Index L (leadership), and the remaining scales of the tests cited above.

These findings support previous views on the nature of giftedness. In summary, the following seem to be the most important points.

- A. The results indicate the verbal nature of giftedness, which is best seen in achievement tests such as in the Cooperative Culture tests. Somewhat surprisingly it does not extend to practical judgment, as measured by the Cardall, to leadership as measured by the Morris Trait Index L, or to other forms of skill as measured by artistic or musical aptitude.

- B. Gifted persons appear more social and less introverted than their college peers. If anything, they are less prone to have emotional problems, and there is no indication of their having more elevation on the clinical scales of the MMPI. The picture of the gifted college student is that of a well-balanced, socially-integrated, healthy-minded person.

- C. The interests of gifted college students would appear to be scientific and theoretical, rather than artistic, musical, religious, or economic.

- D. Taking these results with others relating college students to average adult norms, it would appear that in general, where college students deviate from the norm, gifted students deviate more so in the same direction.

There is no indication that these highly gifted people regress or become asocial in any personality patterns.

Finally, some limitations of the methods of this study should be noted. Gifted college students may differ significantly from gifted students who do not go to college. Gifted college students may tend to be drawn from the ranks of achievers, while those who do not go may be for the most part underachievers. Further exploration of this idea may be found elsewhere (4). Secondly, the methods used to select these students (gross score on ACE) may tend to eliminate those gifted persons who because of personality problems and other factors do not achieve well on the various parts of the ACE. Finally, students in education may not be characteristic of students in the university as a whole.

Summary

Gifted college students above 160 on the ACE were compared with classmates on a large number of test scales involving achievement, interest, and personality factors. Findings supported views of the verbal nature of giftedness, less social introversion, and more scientific interests on the part of gifted students. Gifted appear to constitute a special subgroup of college students.

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To be published:

- + Gowan, J. C., and Gowan, M. S. "Intercorrelations and Factor Analyses of Tests Given Teaching Candidates," Accepted for publication in the *Journal of Experimental Education*.

The California bibliography on gifted child education published in the March 1955 issue of the *California Journal of Educational Research* will soon be replaced by a new format. A second edition, revised by the original authors, J. C. and May Seagoe Gowan, will appear as *Research Resume No. 1*, issued by the State Advisory Council on Educational Research. It should be ready for distribution before the opening of school in September. It may be ordered from the CTA Research Department at seventy-five cents per copy.

A High School Grading Policy

DONALD O. AMERO

This paper represents the consensus of the North High School Faculty in response to a questionnaire¹ prepared by the committee on high school grading policy and also suggestions made by representatives of the various departments at committee meetings. The committee based its recommendations upon a year's deliberation about the philosophy of grading both locally and in other schools. The results of the questionnaire and the committee's conclusions and recommendations were presented to the entire faculty for discussion and interpretation. The administration then approved the final conclusions and recommendations as the established school policy with regard to grading.

Class Types

It was agreed to establish as a basic concept that both the type of course (subject-matter) and the type of student (intellectual capacity) should be considered when making an evaluation for grading purposes. Four class-types were stratified as follows:

Class-Type Strata

- I College Classes. Algebra, Geometry, Physics, etc.
- II AB Classes. English, Mathematics, Social Studies, etc., including both college and non-college preparatory students conducted with higher academic objectives than would be feasible for those of below average intelligence. (The letter B after a subject designates the first semester in this type of class and A the second semester.)
- III CD Classes. English, Mathematics, Social Studies, etc., geared for students with average or below average intelligence where the basic subjects are realized in a practical manner so that academic objectives are related to social living and citizenship as well as to vocational potential. (The letter D after a subject designates the first semester in this type of class and C the second semester.)

¹ The questionnaire and tabulation of results are on pages 112 and 113.

Donald Osborne Amero holds several positions with the Kern County Joint Union High School and Junior College District in Bakersfield. He is an instructor of sociology in the adult education program at Bakersfield College, District Chairman of the Department of Special Education, and Counselor for Mentally Retarded at North High School. He has also worked as a youth counselor and a counselor for mentally retarded in San Francisco, as a correctional officer at San Quentin Prison, and as a teacher with the California Youth Authority. He holds a master's degree from San Francisco State College, obtained in 1954. This article was first prepared as a report on recommendations for a grading policy at North High School in Bakersfield.

IV Mixed Classes. Band, Chorus, Physical Education, Art, Senior Problems, Health and Driver Education, History, Industrial Sciences, Home Economics, Business Training, etc. Generally speaking, these students fall somewhere between the AB and CD type of student with respect to intellectual capacity. The subject-matter will, however, appeal to all types of students and these will be very heterogeneous classes, both with respect to academic objectives and type of student.

Notwithstanding certain exceptions, figure 1 demonstrates the relationship between intellectual endowment and the school curriculum as it exists

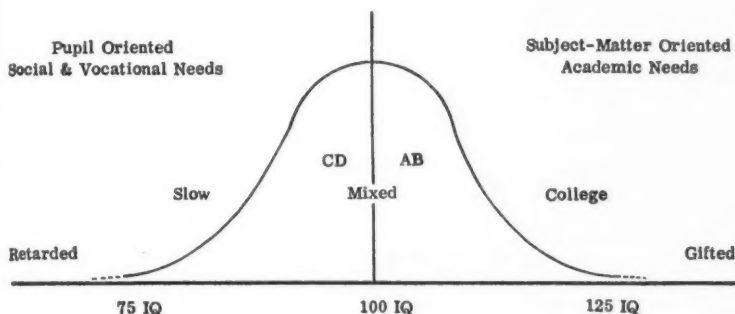


FIGURE 1

A General Relationship Between Type of Student and Type of Course

today in our secondary schools. As we approach 75 and 125 IQ, we get more definitely into the retarded and college types respectively. The gifted and retarded extremes were not considered in this investigation although it is to be expected that our recommendations may be carried a step further in these directions.

Our purpose evolved to the specific task of sampling opinions on five grading criteria as they are related to the curriculum, and in making recommendations with respect to the usage of these criteria. These are: 1) competition relative to the other students, 2) relative to individual ability-level, 3) relative to individual work habits (homework, classwork), 4) relative to individual citizenship (conduct, social accomplishment), and 5) relative to grade level norms (competitive standards). These are illustrated in item 6 of the questionnaire.

Teacher Questionnaire on Grading

Department _____

Check one: 1. College-AB___ 2. CD___ 3. Mixed Classes___

1. a) Are you satisfied with your own present system of grading? Yes___ No___
 b) If not, list your specific dissatisfaction. _____
2. Do you grade each student relative to the other students in the class on a strictly academic and competitive basis without their individual ability levels or social accomplishments influencing the academic grade? Yes___ No___
3. If you take into consideration an individual's ability level and his citizenship (conduct) and his efforts (work) in computing his academic grade, please check the highest grade that you would give if his citizenship (conduct) was excellent and he was working up to the limit of his ability, but he was not working up to the usual standards expected of that grade-level, and was functioning at the lowest level of academic performance relative to the rest of the class A___ B___ C___ D___ F___
4. Do you feel that citizenship or social behavior should have a grade entirely separate from academic performance? Yes___ No___
5. Do you feel that students should be graded without considering individual ability levels? Yes___ No___
6. a) Do you feel that the criteria of grading should be the same for every high school class? Yes___ No___
 b) If not, please designate how you would weigh the following variables in 1) a College or AB Class, 2) a CD Class, and 3) Mixed Classes:
- | | College or AB | CD | Mixed |
|---|---------------|-------|-------|
| a. relative to other students | _____ | _____ | _____ |
| b. relative to individual ability level | _____ | _____ | _____ |
| c. relative to individual work habits (homework, classwork) | _____ | _____ | _____ |
| d. relative to individual citizenship (social accomplishment) | _____ | _____ | _____ |
| e. relative to grade-level norms | _____ | _____ | _____ |

Results

The results of the questionnaire show that these teachers have some definite and fairly consistent ideas. First, it should be noted that 34 as compared to 9 teachers were satisfied with their present system of grading. Along with this attitude, we received such statements as the following:

"It depends on the individual case as to whether credit at the minimum level of passing is given for attitude, effort, and interest in the subject."

Results of Teacher Questionnaire on Grading

Replies to Questionnaire Items

Department	Replies to Questionnaire Items																					
	1		2		3						4		5		6							
	Yes	No	Yes	No	A	B	C	D	F	Yes	No	Yes	No	Yes	No	Yes	No	a	b	c	d	e
College or AB (N=17)	14	2	6	8						14	3			9	9	17		19	4	15	9	24
English	5			3			1	3		4	1			1	4	5		3		1		7
Mathematics	3		2	1			1	2		3				3	1	3		3	1		1	2
Social Science	1	2	1	2			1	1		1	2			1	2	3		2	1	3	1	2
Natural Science	2		2					1		2				2		2		2		1	1	1
Foreign Language			1							1				1		1		1			1	1
Drafting	1			1				1		1				1		1		1	1	1	1	1
Mechanical Drawing	1			1				1		1				1		1				1	1	
Mixed Classes (N=20)	16	6		19	4	5	9	3		2	17			1	22	20		8	16	15	14	7
English		1		1			1				1				1				1	1	2	1
Art	1			1			1				1				1							1
Business	4			3			1	2		1	2				3				1	2	2	3
Health and Driver Ed.	2		2		1						2			2		2			2	2	2	
Home Economics	1	1	2				2			1				2		2		1	1	1		1
Industrial Arts	3		2		1	2	1				3			3		3		1	2	2	2	
Music	1	1	1				2				2			1		1		1	1	2	1	1
Photography	1		1						1		1			1		1		1		1	1	1
Physical Ed.	3	2		5	2	3					5					5		3	5	3	3	
Student Government		1		1											1							
CD Classes (N=5)	4	1		4			1	1	3		2	2			6			13	23	20	19	3
English	2			2				2			1	1			3			2	4	2	1	3
Mathematics	1			1		1					1			1		1		2	2	2	1	
Social Science	1	1		1			1	1			1			1		2		4	2	3	3	
All Classes	34	9	6	31	4	6	12	15		18	22			10	37	42						

"Teachers must work out different weights for different areas within one subject, giving more to one area than another, and this is an individual matter for each teacher to decide."

"In certain instances, I do give students, at the minimum levels of passing, credit for attitude, effort, and interest in the subject."

Fourteen out of seventeen College or AB teachers indicated that citizenship or social behavior should have a grade entirely separate from academic performance; while seventeen out of nineteen of the Mixed Class teachers felt that it should be included as part of the subject-matter grade. The College-AB teachers were evenly divided on item number 5 while practically all Mixed and CD Class teachers felt that students should not be graded without considering individual ability levels. It was unanimously agreed in response to item 6 that the criteria of grading should not be the same for every high school class. All five grading criteria were considered in all types of classes, but grade norms and competition relative to the other students were emphasized in the college-AB courses; while individual ability, work habits, and citizenship were emphasized in the Mixed and CD courses.

Conclusions and Recommendations

Grading, in the last analysis, is left up to the individual teacher as he considers the individual case, but there are certain general principles which may be used as a guide in the evaluation. The criteria of grading should not be the same for every high school class, and a distinction should be made between the College, AB, CD, and Mixed Classes. Teachers should seek advice from school counselors when in doubt about a course grade and this should in no way reflect an inadequacy on the part of the teacher. It is also obvious that teachers should make themselves acquainted with the test scores on their students which are available from the Testing Department.

College Type Recommendations. A student may not receive a grade higher than F even though his citizenship, conduct, work habits, and ability-level accomplishments are high, unless he performs up to certain grade-level standards in competition with the rest of the class. It is therefore essential that only students with high academic ability be placed in the college preparatory curriculum.

AB Type Recommendations. A student may not receive higher than a D on the basis of citizenship and ability-level accomplishment, per se. To obtain a grade of C or higher, the student must demonstrate a degree of proficiency relative to the other students and to grade-level norms.

CD Type Recommendations. Since these courses are pupil-oriented and the subject-matter is geared to social living in a practical situation, a student may earn up to a C on the basis of work habits, effort, citizenship, and

ability-level accomplishments, even though he may be the lowest relative to the rest of the class as compared to any grade-level norms of an academic nature. To obtain a grade of B or higher which would meet the requirements for honor roll placement, the student must, in addition to the behavior proficiency required for a C, meet certain grade-level standards of an academic nature relative to the rest of the class.

Mixed Type Recommendations. These are essentially the same as the CD recommendations. It has been suggested that certain courses, e.g., Business Training and Photography, have definite grade-level standards. In a really heterogeneous class, e.g., Home Economics, Health and Driver Education, Physical Education, etc., it may be wise to emphasize work habits and citizenship if a student is of low potential, and academic performance according to grade-level norms if he is of a high potential. In any case, no grade higher than a C should be given on the basis of work habits and citizenship, per se.

Honor Rolls. This is to be conceived as academic in nature; and all students, whatsoever their class or mental type, shall not receive an A or B making them eligible for the honor roll unless they have demonstrated an academic proficiency which earns them that grade relative to the rest of the class and/or in accordance with grade-level norms. Some CD students will, therefore, be eligible for the honor roll since they will receive a higher grade in competition with the rest of the class.

Educational researchers will want to note the recent retirement of Dr. Alfred Lewerenz from his post as director of research in the Los Angeles City Schools. Dr. Lewerenz has been friend and advisor for so many of us over a period of years that his absence from our conference will be keenly felt. "Al" simply decided that 38 years of service to education was enough and that the remainder of his energy and enthusiasm should be spent on personal satisfaction. We heartily agree and expect him to rival James Melton and Lucius Beebe as a connoisseur of vintage vehicles. His place in the research of the Los Angeles schools system will be filled by Howard Bowman, and we herewith offer Howard congratulations and best wishes.

Factors Observed by Teachers in Relation to Mental Retardation

JOHN C. WILBANKS

The purpose of this study was to determine through a survey of the experiences of teachers and investigators the (1) personality characteristics, (2) mental characteristics, (3) social characteristics, (4) health factors, and (5) individual differences among mentally retarded school children as compared with normal-class children. This was attempted through an analysis of related research and literature, and through questionnaires as filled out by a number of teachers having classroom experiences with both mentally retarded and "normal" groups.

The study further included an abbreviated compilation of the written materials related to the characteristics of mentally retarded children.

The questions in this study which were considered in terms of research and survey were:

1. Does the mentally retarded child differ, systematically, from other children in any way?
2. What, as revealed in the classroom, are the personality characteristics of mentally retarded children as being different from those in ordinary classes?
3. What, as observed in the classroom, are the mental characteristics of mentally retarded children as being different from those in the average classes?
4. What differences in health and physical characteristics have been observed to exist between mentally retarded classes and normal classes?
5. What differences have been revealed in the classroom as to social factors between mentally retarded classes and normal classes?
6. What observable differences have been noted between retarded classes and average classes as regards home conditions and parental relationships?
7. What differences exist between teachers' conceptions of retarded classes and their evaluations of mentally retarded individuals in terms of the personality, mental, health, social, and home factors listed in the questionnaires?

John Cooper Wilbanks is a psychologist with the Pasadena City Schools, a position he has held for the past two years. His prior experience was as a teacher of both mentally retarded and normal classes in elementary and secondary schools, and as a part-time instructor at the University of Southern California and at Pasadena City College. He obtained the Ed.D. degree in 1954 at the University of Southern California. This article is based on his dissertation.

8. In what ways do mentally retarded boys differ from normal boys?
9. What differences have been observed between mentally retarded girls and normal girls?

Method of Procedure

The procedure in this problem included a threefold method of approach involving (1) a questionnaire appraisal of retarded classes with normal classes as made by teachers who had taught both kinds of classes; (2) a case questionnaire appraisal of retarded individuals with normal-class individuals; and (3) a careful analysis of the available literature related to characteristics of mentally retarded children. The results of these class and individual comparisons have been related with the results of other objective studies as well as with suppositions arising from related literature.

The survey included both class, or group, comparisons and case, or individual, comparisons. The class questionnaire survey included an evaluation by 202 Los Angeles City School teachers, representing seventy-eight elementary schools, on a class-comparison questionnaire form which included forty-one items. These items were generally categorized into five subjects for comparative purposes, namely: (1) Personality Factors, (2) Mental Characteristics, (3) Factors of Health, (4) Social Factors, and (5) Home Factors. The teachers evaluated their mentally retarded classes with the normal classes they had taught in respect to each of these items.

The questionnaire survey was limited to teachers of the Los Angeles City Elementary Schools who had instructed both mentally retarded and normal classes. It involved only an appraisal of fourth, fifth, and sixth grade children with chronological ages from nine to thirteen years inclusive. In general, these questionnaire evaluations were limited to an appraisal of the moron-intelligence groups with the exclusion of the imbecile and idiot classifications.

From the 202 class-evaluation teachers, fourteen were chosen for further participation by evaluating 258 individual normal-class boy and girl cases with an identical number of retarded-class boy and girl cases in respect to the forty-one questionnaire items. These comparisons were made on the bases of sex and grade level. A total of seventeen Los Angeles Elementary schools were represented in this appraisal.

Questionnaire Factors

The controlling theme in the selection of the forty-one questionnaire factors was that these factors seemed to embrace the appraisals of both authors and teachers in regard to characteristics of mentally retarded children. Lists were made by the writer of the characteristics mentioned in the results of previous studies relative to mentally retarded children. Other lists were similarly compiled from the opinions of various authors as they evaluated the characteristics of mentally retarded pupils. These lists were

combined with an additional list of characteristics as observed by teacher acquaintances of the writer. These compiled lists were then categorized into the general terms, or factors, as appeared in the questionnaires.

In order to avoid habituation of response in the evaluations of these terms, closely related factors within the categories were separated. Further precautionary measures were also employed within the construction of the questionnaires in order to avoid "halo-effect." This was attempted through stating the factors in such a manner that a "favorable" evaluation would be positive in some factors yet negative in others. This kind of random arrangement tends toward engendering a careful consideration before responding on the part of the evaluator.

After the completion of the initial questionnaire form, eighteen teachers, who were experienced in both types of instruction, were asked to evaluate it. This evaluation, or criticism, was in terms of the form's clarity, validity, coverage, and utility of factors used. The teachers involved in the case studies were in continuous touch with the writer by means of correspondence and personal interview. Their criticisms of the questionnaire items, and of the survey in general, were invaluable.

The survey included two forms of questionnaires (1) a class, or group, and (2) a case, or individual, form designed for comparative purposes which were sent to selected Los Angeles City School teachers. Each questionnaire was comprised of nineteen personality items, nine mental factors, six health items, four social factors, and three home factors totaling forty-one items. The class form included two additional items about curriculum.

Sampling Population

The names of the teachers who received class-comparative questionnaires were obtained from the Los Angeles City Schools Directory of Personnel. Two hundred and seventy-nine teachers of mentally retarded elementary classes were listed in the Directory. Nineteen of those teachers, so listed, were unlocated. Fourteen teachers, of those listed in the Directory, were unqualified because of a lack of experience in teaching normal classes. The omission of the known unqualified returns and unlocated teachers left a sampling population of two hundred and forty-six.

Of the sampling population two hundred and two questionnaires or eighty-two per cent were returned. These returns represented seventy-eight elementary schools and all five of the Los Angeles City School districts, in regard to a general evaluation of the characteristics of mentally retarded classes as compared with normal classes.

The teachers responding had taught mentally retarded classes an average total of eight and two-tenths school years, and normal classes an average total of ten and nine-tenths school years. The elementary school grades evaluated were fourth, fifth, and sixth grades. The chronological age-ranges of the children in these classes were nine to thirteen years, inclusive.

The factors of the case questionnaire were identical to the factors employed in the class-comparative questionnaire. The case questionnaire also included a Health Date check list, instructions, and other data pertinent to individuals which was not a part of the class-comparative questionnaire.

The questionnaires were favorably received by most of the teachers for the class-comparisons. Several of them enclosed notes, or letters, of enthusiastic comments revealing a desire for further contribution to the survey.

From these teachers, who offered their additional services, fourteen were chosen to evaluate individual retarded pupils in terms of normal-class individuals. The major factors in the selection of these teachers were: (1) the length of service in normal and mentally retarded class instruction; and (2) their enthusiasm and eagerness to participate in this type of study. These teachers had taught normal classes an average total of 12.5 years and retarded classes 9.3 years.

The case questionnaires enabled the fourteen teachers to compare a pupil in a mentally retarded class with a normal-class pupil of corresponding grade, sex, and chronological age. These individual evaluations were made on 258 mentally retarded pupils representing seventeen elementary schools.

One hundred and fifty-one retarded boys were compared on each of the forty-one questionnaire items, with 151 normal boys as evaluated by these fourteen teachers. These boys were from the fourth, fifth, and sixth grades. Their chronological ages were from ten to thirteen years, inclusive.

One hundred and seven retarded girls were compared on each of the forty-one questionnaire items with 107 normal girls as evaluated by these fourteen teachers. These girls were from the fourth, fifth, and sixth grades. Their chronological ages were from ten to thirteen years, inclusive.

The pupil, or class, being compared could be evaluated by the teacher as either: Considerably More, Somewhat More, About the Same, Somewhat Less, or as Considerably Less in each of the questionnaire items. The mean was used as a measure of the central tendencies of the questionnaire results in this survey because it is considered as the most accurate measure of central tendencies. The chi-square test was further applied to the questionnaire tabulations as a method of evaluating the significance of existing differences between the observed, or actual, frequencies and the frequencies expected if only chance operated.

Findings

The findings of the teachers' evaluations of retarded class-groups, as compared with normal groups, indicated retarded classes as being different, in the direction of poorer quality, from normal class-groups in all but one of the forty-one questionnaire items. The exception was the factor, Sense of Personal Freedom.

Retarded boys were considered by their respective teachers as being different, in the direction of poorer quality, from normal boys of corresponding chronological ages in all of the questionnaire items. Retarded-girl cases were believed to be different, in the direction of poorer quality, from normal-girl cases in thirty-eight of the forty-one factors listed in the questionnaire. The exceptions were: Sense of Belongingness, Sense of Personal Freedom, and Anti-Social Tendencies.

A comparison of the individual-case results for boys with the results of the class-to-class evaluations showed that retarded-boy cases were considered to be more divergent from normal-boy cases than retarded classes from normal classes. A comparison of the individual-case results for girls with the results of the class-to-class evaluations showed that retarded-girl cases were considered to be less divergent from normal-girl cases than retarded classes from normal classes.

Mentally retarded children were thought of, in this survey, as lacking in leadership qualities such as self-confidence, self-criticism, and a sense of personal worth. The results of the survey further reveal a belief that these children tend to withdraw from group participation, and that they lack self-confidence and a sense of belonging to the group. Conditions of stubbornness, irritability, persecutory, or general emotional instability were believed to be more existent among retarded individuals and classes of retarded than were apparent among normal individuals and classes of normal children. Mentally retarded children were considered as most consistently different from normal pupils in the mental characteristics of the questionnaires than in any of the other sections.

The items of Judgment and Abstractions carried the highest chi-square tests and means than any of the other questionnaire items. Closely related factors of Immature Game Activities and Suggestibility were next in order of divergence. Consistent mental weaknesses resulting in short attention span, marked mental fatigue, and apathy were considered as very definitely related to mental retardation by the teachers participating in this survey. Retarded children were evaluated by their teachers as tiring more easily than normal children. They were also considered as more susceptible to colds, headaches, and malnutrition.

The factors entitled Headaches and Common Colds were the only factors of the questionnaire wherein the results of the retarded-girl cases exceeded those of the retarded-boy case comparisons. In all other items mentally retarded boys were considered more divergent from normal-class boys than were mentally retarded girls from normal-class girls.

Retarded children were found to possess inferior motor coordination as observed, and evaluated, by the teachers participating in this study. Retarded children in group situations, or as individuals, were thought to be less socially active and less able to accept social responsibilities as compared with normals. Anti-social tendencies were noted among retarded-boy cases. However, these tendencies were not apparent among the retarded-girl cases. Com-

munity relations were believed to be less favorable among the retarded cases, and classes, as compared with normal-cases and classes. More problems were considered to be existent in the parental and sibling relationships of retarded children than were observed among the normal groups or individuals.

Conclusions

The personality weaknesses of mentally retarded children, as borne out in the research and the results of this questionnaire survey, infer that there is a need of stress in teaching procedures on group participation and the use of group-dynamic techniques. Psycho-drama and role playing have been successfully employed by some teachers as a means in helping these individuals to better understand themselves. These techniques offer the pupil the opportunity to experience the points-of-view of various other members of the group. Furthermore, the opportunity to evaluate his own attitudes and performances is offered the pupil as portrayed in drama by other members of his group. Such procedures have a tendency to counteract withdrawing tendencies and to favor a sense of belongingness to the group. Self-identification, appraisal, and projection may be usefully employed in relation to a class-group.

In view of the findings concerning mental characteristics of mentally retarded children it seems logical to assume that the teacher of special classes might profitably employ short lesson assignments with emphasis on concrete and observable materials. Abstractions might well be avoided whenever manipulative materials are available. Any instruction which favors abstract learning in lieu of observable and manipulative material, is questionable in terms of purpose and practicability as evident from these findings. Ideal special class instruction must consider the problems and weaknesses accompanying mental retardation and must endeavor to meet those needs with specially designed methods and materials.

The findings of this study, and of the related literature, indicate that mentally retarded children should be guarded from long and strenuous activities which are, by nature, physically demanding on one's strength and endurance.

Complex shop equipment such as electric drills, lathes, and band and circular saws, are to be used with extreme caution and under the close supervision of the teacher. Poor motor coordination, as shown in the literature and in this study to be characteristic of these retarded children, warrant this discretion.

The results of this survey indicate that teachers who have had experiences in both special and normal class instruction consider mentally retarded children as possessing less social skill as compared with normal-class children. These findings logically invite a type of instruction for these children which stresses social adaptiveness. Every opportunity for group inter-action might well be made available as an avenue of instruction.

A Pre-Employment Test for Salespeople

EDWARD G. STOY

It is a truism that to be successful a salesman has to know thoroughly the product he is selling. Granted, this is only one factor in making a sale, but nevertheless it is one that is often overlooked by retailers in selecting personnel.

One can hardly expect beginners to have a detailed knowledge of merchandise. Retailers can, however, select beginners who have an interest in merchandise and an aptitude which will permit them to learn *quickly and easily* the stock they are to sell. Since department stores make most of their profit in the fall season, anything that can be done in this period to help insure the employment of temporary personnel who can absorb their training quickly, and who can learn easily *on their own*, increases profits. Pre-employment tests help, for the selection process must be fast. There just aren't enough interviewers on the staff to allow for giving thoroughgoing interviews to applicants for Christmas jobs. And there aren't enough people on the training staff to make real salespeople out of mere sets of arms and legs.

This article is concerned with the subject of merchandise information—specifically with a *test* of merchandise information. The test is compiled of questions regarding merchandise, but it obviously involves an interest factor. A girl raised in the same household with her sister, and exposed to the same information about such things as style, custom, wearability and washability, may absorb a considerable amount of such information; but her sister, through lack of interest, or curiosity, absorbs little of it.

The test is *not* designed to determine how much of a given kind of merchandise information a student has at her fingertips, and which could presumably be put to use immediately. Rather, it is designed to be used as a predictor of how quickly she can learn, and is interested in learning, when she gets on the job.

A number of years ago the writer validated a short test of merchandise information for San Francisco's largest department store. The criterion by

Edward Guthrie Stoy is a consulting industrial psychologist with R. G. T. Millar, M.D., and Associates of San Francisco, a position he has held for 3 years. Previously he was Director, Personnel Research, R. H. Macy and Company, New York, and a staff psychologist of the Institute for Child Guidance of New York City. He has been in the field of industrial psychology for 21 years. He received the doctor of philosophy degree from the University of Chicago in 1928.

This article is published primarily because of its possible value to work-coordinators, counselors, and teachers of commercial subjects who may be asked to recommend students for part-time employment in large stores. Further information regarding the test may be obtained by writing Dr. Stoy at Suite 426, 490 Post Street, San Francisco.

which the value of the test was measured was carefully designed, and consisted of four factors: production (sales), buyer's job performance rating, a rating by the service representative (called section manager by some stores), and a service shopper's report. The test was given to a group of inexperienced student "Xmas extras," but it was not used for selection that first year. Seventy-seven per cent of those who attained an optimal score on the test proved to be successful on the job, whereas only 15 per cent of the group who failed to obtain this score proved to be successful. In time, certain items on this test became out-of-date, so a new test of the same type was validated, using the old test as a criterion.

These two tests, in combination, were used as a criterion for a third test, which is the subject of this article. One hundred four questions dealing with merchandise information comprised the new test, which was given to students of retailing in four San Francisco high schools and one in San Bruno, California. The questions were of this type: 1. Balbriggan is the name of a (1) yarn (2) fabric (3) article of clothing. 2. Which of the following is most likely to be used in a coat: (1) Nylon (2) Dacron (3) Orlon.

For validation purposes the girls in the classes were divided into two groups: (1) those who attained or came close to attaining the cutting scores on the two tests used as a criterion (43 per cent of the girls) and (2) an equal number who made the poorest showing on the criterion tests. Thus, 14 per cent of the girls tested (a small middle group) were not used in the validation process. An item analysis yielded 61 questions which differentiated the two groups.

The final form of the new test of 61 questions shows a point bi-serial correlation coefficient of .69 with the criterion, and a product-moment correlation coefficient of reliability of .89 (odd-even). Stated another way, 82 per cent of the group who did best on the criterion tests attained the optimal cutting score on the new test, as against only 20 per cent of the group who did poorly on the criterion tests.

More importantly, the group who did best on the criterion tests showed a mean score of 66.4 and the other group a mean of only 43.4. The difference here, of 23 score points, is 10 times the standard error of the difference. A commonly accepted indicator of the significance of a difference of two means is a difference of 3 or more times the standard error of the difference. A ratio of 3 is usually interpreted to mean that the chances are 99.9 out of 100 that the true difference is greater than zero. A ratio of 10, of course, increases the probability tremendously.

In its present form, then, we have a twenty-minute test of a type already proved to be practicable for department store or school use. It is easily administered and easily and quickly scored.

The same test may be used for the selection of boys, but with less accuracy. Twenty-four boys who were members of the same classes from which the girls were drawn passed, or nearly passed one of the first criterion

tests mentioned above. Twenty-four who did least well on the criterion tests were used as a matching group. The remaining sixteen were not used in the validation. Seventy-nine per cent of the group who did well on the criterion test attained an optimal cutting score set for the test; and 33 per cent of the poor group attained this cutting score. The ratio of the difference of means of the two groups, divided by the standard error of the difference, is 3.54. The chances that the true difference is greater than zero are 99.9 out of 100 (or about 1,000 to 1). A product-moment correlation coefficient of reliability (odd-even) is, however, only .56.

It was stated earlier that there are probably a number of basic factors responsible for the relationship existing between scores on this test, and the criterion used. Verbal and other types of intelligence may also be factors. It is interesting to note, however, that a point bi-serial correlation coefficient between IQ (furnished by the schools) and the criterion is .30 as compared with the bi-serial correlation coefficient of .69 for the merchandise information test (as stated above).

It is believed that the test may assist counselors and teachers in selecting students for classes in retailing; help to indicate early in a school term the students who are going to have difficulty in class; and assist schools in recommending students *early in the term* to stores which could well use student temporary sales help. In cases where schools do little or no testing, department stores could well use the test for selection.

If department stores already use tests, an ideal arrangement is for schools to pre-test the students they recommend to stores, and for the stores to check recommendations by their own tests. In that way the schools are more sure of their recommendations, the stores are doubly sure of their selections, and few students are turned away at the point of hiring. The writer has found that one of the sources of irritation for students, their parents, their teachers, and the employment staff of a store itself, is the number of student applicants turned down because they do so badly on a pre-employment test, or a battery of such tests. Some of this irritation can be avoided.

Auding . . . (Continued from Page 104)

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12. Villareal, J. J. "A Test of Aural Comprehension of English by Native Speakers of Spanish." *Speech Monograph*, 1948, 15, 121-132.
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Annual Meeting

California Educational Research Association¹

The thirty-fourth anniversary meeting of the California Educational Research Association was held at the Hacienda in Fresno on March 23 and 24, 1956. The conference opened with a general session the evening of the twenty-third with Jack A. Holmes, second vice president, presiding. Johannes M. Nielsen, M.D., Clinical Professor of Neurology at the University of California at Los Angeles, spoke on "The Neurological Bases of Some Psychological Disturbances."

The morning general session on the twenty-fourth, presided over by Edward A. Taylor, second vice president, served as a kickoff for the presentations of research papers in the section meetings of the day. Merle H. Elliott posed the question, "Has Educational Research Paid Off?", while Garford G. Gordon replied with, "Educational Research Can and Will Pay Off!" An unusually large number of research studies was offered at this year's conference, a total of 56 studies being presented during the morning and afternoon section meetings. The papers covered a wide range of topics and research methods, as a perusal of the following digests will indicate. All sections of California were well represented.

Charles W. Bursch, II, president of the California Educational Research Association, presided at the luncheon meeting which traditionally includes the annual business meeting of the organization. The speaker, T. R. McConnell, Professor of Education at the University of California at Berkeley, offered "The Diversification of American Education: A Research Proposal."

Fresno welcomed CERA with beautiful weather and unsurpassed cooperation from the educators and laymen of the community. Every request for assistance received immediate, willing attention. At each general session one of Fresno's top educational administrators brought greetings—Irwin O. Addicott, Executive Dean at Fresno State College; Walter G. Martin, Superintendent of Fresno County Schools; and Edwin C. Kratt, Superintendent of Fresno City Schools. The local press gave excellent coverage to the conference. The participants, some 150 of them, will remember Fresno and the 34th annual meeting of the CERA as pleasurable and profitable.

¹ By Hazel M. Lewis, Stockton Unified School District, Secretary-Treasurer of the Association.

GENERAL SESSION ADDRESSES

The Neurological Bases of Some Psychological Disturbances—Johannes M. Nielsen, University of California at Los Angeles.

The human nervous system is organized into hierarchies, the *cerebral cortex* being the highest. Next comes the *basal ganglia* which control the motor activities of the nervous system. The *thalamus* transmits cortical impulses to the lower parts of the nervous system. A lesion here causes generalized, uncontrolled activities of appendages. Lesions of the *cerebellum* cause incoordination.

The left *cerebral cortex* controls the right side; the right cortex controls the left side of the body. Language patterns are formed on the left side of the cortex for righthanded people. General cortical damage results in feeble-mindedness. Localized cortical lesions cause handicaps in one area. Specific motor disabilities of aphasia may result. Epilepsy may appear if an *atrophic gyrus* is present and under pressure. We find that the opposite side of the brain can be trained to take over the functions of the side knocked out by the lesion. The function of a projection area, of course, cannot be replaced.

The actual engramme patterns in the brain are traceable on slides of cross-sections of the brain to indicate not only where concept formations take place, but how these areas may be connected to such memory areas as vision, touch, auditory, etc. Destruction of any of the engramme patterns involving these connections results in agnosia.

The brain area for recognition of objects is separate from the area for revisualization of objects. The specificity of the brain is such that it appears to categorize animate and inanimate objects so that the engramme patterns for each are established in the left and right occipital lobes.

The symptoms resulting from the interruptions of the engramme patterns involved in the formation of language, the sounds of speech, reading and writing were also discussed. In the cases studied all these symptom patterns had an organic basis, but it is also true that each syndrome has been known to be related to functional or psychic causes.

Has Educational Research Paid Off?—Merle H. Elliott, Oakland Public Schools; Educational Research Can and Will Pay Off!—Garford G. Gordon, California Teachers Association.

Dr. Elliott based his remarks on a report of the proceedings of the First Annual Conference of the California Educational Research Association, which was held in 1922. He called attention to the fact that the major areas of concern were the same as those under consideration today, and that the greatest problem facing researchers then as now was that of getting research findings utilized by classroom teachers. Dr. Gordon, however, went on to call attention to some of the differences between 1922 and 1956. He pointed out that, although the same problems are being considered, they are being dealt with on a more sophisticated level now.

According to Dr. Gordon, educational research may well be at a critical point in its development. Data has always been gathered on the basis of the questions that are asked and interpreted on the basis of the criteria that are accepted. But, the questions and criteria have not always been set forth explicitly. They have often been inconsistent and their limitations and implications have frequently been misunderstood. But now it seems probable that we have a sufficient body of data, and a sufficient amount of historical perspective, to be able to begin formulating self-consistent and usable sets of principles upon which the questions and interpretations of future research can be based.

Dr. Gordon concluded by pointing out that the statement of principles formulated by the Commission on Educational Policy of the California Teachers Association and known by the name, "We Hold These Truths . . ." can serve as a source of guidance for educational research in the State. He expressed confidence that with its aid, at least as much progress could be expected in the future as had occurred since the 1922 meeting reviewed by Dr. Elliott.

The Diversification of American Education: A Research Proposal—T. R. McConnell, University of California, Berkeley.

The diversity of American higher education is not sensed or understood by visitors from abroad because such diversity is unknown in their educational patterns. In this country we are not wholly cognizant of the wide differences in purposes, curricular patterns, and student groups found in our various types of colleges and advanced training institutions. In many ways diversification is desirable in our society, but the extent and nature of the differences should be consciously determined rather than allowed to develop at random.

There are a number of research studies that need to be undertaken to provide information on specific aspects of the American diversity in higher education as it now exists. These studies should be followed by research to evaluate the effectiveness of the different patterns and methods. Then we will be in a position to design patterns of higher education to achieve a balance between uniformity and diversity that will provide optimum programs for youth training for a wide variety of careers in our society.

ADMINISTRATION

The Process of Decision-Making by Boards of Education

PART I: Behavioral Relationships in Decision-Making by Boards of Education—Howard S. Bretsch, University of California, Berkeley, and David M. Snider, Graduate Student.

The verbal behaviors, interactions, and moods of the members of two city boards of education in all their regularly scheduled meetings are recorded over a six month period. Adjective reference lists, developed instruments, and mechanical recordings are used to record the proceedings of each board meeting and to analyze the relatedness of patterns of behaviors to the facilitating, deferring, or obstructing of decision-making.

Roles and functions are disclosed, characteristic of individual participants in the decision-making process. Behaviors evoked are found to be related to the criticalness of the issues, to the manner of their presentation, and to the bases used by individuals in making their decisions.

PART II: Bases Used by Board Members in Making Decisions—Howard S. Bretsch, U.C., Berkeley, and Orrin D. Wardle, Graduate Student.

Board members may approach their decision-making responsibilities from a variety of bases: personal, social, situational, and ideological. These are frequently revealed in the verbalizations and behaviors of the Board member in the Board meeting. Because observation of the meeting does not always yield a satisfactory measure of the bases, follow-up interviews are conducted. The bases which motivate Board members in the decision-making process do not seem to be hidden. The situational basis provides about 50 per cent of the motivations, followed quantitatively by the ideological, with the social and personal bases least evident. Motivation solely by the personal basis is not evident; another basis is always concomitantly used, most often the situational. In fact, there is an interrelatedness of bases in about 50 per cent of the individual incidents of participation.

Enrollment Projections of the State Colleges of California—Joel A. Burkman, State Department of Education.

To maintain the building program of the State, it is necessary each year to project the enrollment of the state colleges for the ensuing ten years. The projections are based on the historical grade progression of pupils and on assumptions

as: (1) service area boundaries of the colleges will continue except as modified by new colleges; (2) present entrance standards will be maintained; (3) junior colleges will serve an increasing proportion of lower division students; (4) the present pattern of educational programs will in general be continued.

For building purposes, the enrollment is reported in terms of the full-time equivalent of students enrolled for seven or more units. That enrollment amounted to 31,269 in 1954-55 and is projected to 96,400 in 1966-67.

Development and Validation of a Practical Instrument for Evaluating Faculty Morale—Lester Roth, California Teachers Association.

The Personnel Standards Commission of the California Teachers Association expressed a need for a practical method by which faculty morale could be evaluated. To meet this need the Research Department of the CTA studied research in the area of morale—job satisfaction and developed a morale evaluation instrument for the Commission.

Logical categories of faculty dissatisfactions were postulated. A check list containing 110 statements was constructed. The statements were assigned to the categories. Two sets of judges were used to validate the check list. The working model contained 93 items and a free response line for each item.

Four elementary and four secondary schools were selected to field test the check list. Four schools were classified high morale and four were classified low morale. Criteria for the classification was the knowledge of Field Service personnel about each school's reputation plus comparison of the knowledge with job satisfaction-dissatisfaction definitions.

The findings suggested the check list had considerable promise for use by the Commission. Opinions of the judges and/or the validity of the check list were sustained. Continued experimentation with the check list is warranted. A scoring grid and an administration-interpretation manual will increase the usefulness of the instrument.

The Self-Contained Primary Unit—Norvel L. Smith, Alameda County Schools.

The problem was to evaluate physical plants of selected primary units; to determine whether literature claims regarding advantages of the self-contained unit were supported by practice; and to investigate administrative problems of operation. Data were gathered from observations of school plants, school records, parent and teacher questionnaires, logs of parent visits, and interviews of school administrators, urban planners and recreation staffs.

The following are the significant findings: 1. None of the plants approached the ideal. Most lacked general service facilities, adequate sites, and attendance areas. 2. Claim that they foster enriched home-school relationships was supported only in terms of contacts emanating from homes. 3. Claim regarding facilitation of flexible programs was only partially supported. 4. The units presented a number of administrative problems, e.g., lack of a full-time principal, school crossing supervision, noon-time supervision, and high cost per square foot and per pupil.

The Social Composition of Boards of Education of Elementary Schools with Enrollments of Five Hundred or More in Five Northern California Counties—Leonard A. Whitegon, Parkview School, Chico.

This study was made in the Spring of 1954 to determine the status of school board members in elementary school districts with enrollments of five hundred or more in five Northern California counties. A total of 61 out of 74, or 82.4 per cent, of the board members in sixteen districts responded to the questionnaires. The schools included in this study enrolled 69.7 per cent of the elementary school population in these counties. The questionnaire was constructed to determine the personal characteristics, educational achievement, family status, occupational status, economic status, and civic participation of the respondents.

A comparison of the school board members with the general adult population indicated that the school board members in this area were parents and were quite above the average in respect to educational attainment, economic status, occupational status and participation in civic and fraternal organizations.

MEASUREMENT AND PREDICTION

The Prediction of Success in Graduate School Based on Undergraduate Records and the Miller Analogies Test—Hubert C. Armstrong, Claremont Graduate School.

This study is an application of the discriminant equation to two groups of students in the Claremont Graduate School. One group was composed of those whose grade point average was 3.1 or more ($A = 4$ points); and the other group consisted of students whose grade point average was less than 3.1. The first group is called the "success" group and the second, the "doubtful" group. Seventy-three (73) were in the success group and 21 in the doubtful, 94 in all. Two independent variables were used to predict success. One was the undergraduate grade point average, and the other was scores on the Miller Analogies Test. This study is based on a part of the data obtained by Mr. M. T. Varughese in his study of graduate school success. It differs from his in two respects: (1) His data included all students who had done 5 or more hours of graduate work, while this study includes only those who have done at least 15 hours of work; (2) His study employed correlation techniques on more variables but with different and overlapping N 's for the several variable combinations, while this employs two measures on the same group. The discriminant equation is a device for weighing scores to maximize the separation of the two groups, in this case the doubtful and success groups. The data:

Statistic	Claremont G.P.A. (criterion)			Miller Scores y variable			Undergraduate G.P.A. x variable		
	Doubt.	Suc.	Tot.	Doubt.	Suc.	Tot.	Doubt.	Suc.	Tot.
N	21.	73.	94.	21.	73.	94.	21.	73.	94.
Means	2.90	3.58	3.43	48.4	59.0	56.7	2.80	2.77	2.79
Diff. in means	.69			10.7			-.025		
S.D.	.355			16.0			.545		

Solution of Discriminant Equation

$v = .0127y + (-.079x)$ In deviation form.

$V = .76 + .013 (X-56.7) - .079 (Z-2.78)$ In raw score form.

(Note: .76 is in sigma units.)

Delta = $3.887 + .056$ (i.e. Miller Sc. contributes about 98.5% of the effective forecasting).

$R(p) = .29$ or $.35$ (corrected for coarse groupings).

$F = 4.04$ (significant between the 1% and 5% levels).

The inability of these two measures to predict highly suggests that the criterion be examined for reliability and/or other variables—such as motivation, maturity, differences between undergraduate and graduate study, occupational orientation, knowledge, quantitative ability—be investigated.

A Practical Method of Measuring Teacher Load—John P. Buchanan, Vallejo Unified School District.

This study was concerned with the analysis of an abbreviated method of measuring teacher load as developed in the secondary schools of the Vallejo Unified School District. The analysis was made by computing correlations on the loads of various groupings of teachers as determined by the Vallejo method and the Harl R. Douglass formula for measuring teacher load.

Analysis resulted in the following conclusions: (1) The Vallejo method showed its highest validity when measuring highly specialized programs. (2) The use of this method in measuring diversified programs should be made only with careful qualifications. (3) The weighting of a homeroom assignment was found to be too low. (4) The validity of the method can be increased by the use of the Douglass subject-grade coefficient.

Some Validity Coefficients for Study Test Scores—Harold D. Carter, University of California, Berkeley.

The California Study Methods Test was administered to 174 ninth-grade pupils for whom IQ's and grade point averages were also available. In a study of predictive validities, the following results emerged:

(1) The study methods test and the intelligence test were equally good predictors of achievement.

(2) The study test and the intelligence test make independent contributions to the prediction of grades. The two together predict better than either does alone.

(3) The part scores of the study test dealing with attitudes toward school and study are better predictors of achievement than are the part scores concerned with mechanics of study.

A Study of the Association Between Grades Obtained and Grades Predicted by Junior High School Pupils—Frank R. Davis, Jr., Long Beach State College.

To gain information relevant to the reality orientation of pupils' perceived self, it was desired to investigate the existence of a significant association between obtained grades and advanced predictions made by the pupils and the influence, if any, of intelligence. Grade predictions were obtained from six classes of junior high school pupils on the third school day in September. The sample of predictions ($N=180$) was equally divided among seventh, eighth and ninth grades and into a dichotomy of "familiar" vs. "unfamiliar" subject areas.

The combined distributions of predicted and obtained mid-semester grades for each class, the total sample, and above and below average IQ groups were placed in contingency tables. Chi square was computed to determine the existence of an association. The Tschuprow coefficient (T) was used as an index of the degree of association. The Tschuprow coefficient has a maximum value of 1.0 in any table and is defined by the equation: T^2 squared equals ϕ^2 squared divided by the square root of (df).

It was concluded that, in general, a significant association exists between obtained and pupil predicted grades. In particular, it is most likely to occur in familiar subject areas. In junior high school, intelligence plays a minor role in determining prediction accuracy.

A Preliminary Review of the Data for 1,000 College Undergraduates Individually Tested with the Wechsler-Bellvue Scale, Form I—Walter T. Plant and James M. Sawyer, San Jose State College.

An analysis of the scores for 1,049 college students was made with the following results having been obtained: (1) there were no statistically significant sex differences in Wechsler Verbal, Performance, or Full-scale IQ's, (2) there were statistically significant differences in Verbal, Performance, and Full-scale IQ's for 230 sophomores compared with 819 freshmen favoring the sophomores, and (3) a table of selected percentiles was prepared for the 819 freshmen Verbal, Performance, and Full-scale IQ's.

A Study of the Relationships Between Entrance Tests and Achievement for Male and Female Students at San Jose State College—David M. Sawyer, San Jose State College.

This study was an evaluation of objective tests and high school records as screening devices for college applicants. The subjects involved were 476 entering

freshmen in 1953. While males were superior on test scores and females on high school achievement, all correlations with college grades were larger for females. Entrance test scores did as well as measures of high school achievement in predicting first term college achievement. Combining test scores and high school achievement measures increased the ability to predict college success. One may assume that adjustment to the college situation might be more difficult for males than females because of the differences in needs, levels of aspiration, and related study habits among the same aged high school graduates.

Relationships Between Norms for Mental Maturity and Achievement Tests

—William M. Shanner, California Test Bureau.

Achievement goals can be established for individuals and groups by adjusting norms for tests in terms of differences between characteristics of the norming population and the individual or group with respect to (a) intelligence grade placement, (b) intelligence quotient, (c) mental age, (d) chronological age, and (e) grade placement. Adjustments are based upon statistical tables indicating actual achievement for groups based upon the various characteristics listed. The standard deviation of achievement test results is found to be .715 times the standard deviation of mental maturity test results expressed in grade placement units for grades 5 to 7 combined.

The Columbia Mental Maturity Scale as a Screening Test for Special Classes—Edward A. Taylor, Alameda County Schools.

In order to determine the effectiveness of the *Columbia Mental Maturity Scale* as a device to predict the eligibility of elementary school children for admittance to special point-one classes, 113 elementary school children referred for psychological study were tested with the CMMS and the *Wechsler Intelligence Scale for Children*. It was found that the CMMS appears to be a satisfactory screening test for mentally retarded classes provided the child obtains a CMMS mental age of 9 years or less. Subjects with CMMS mental ages of 10 years or more will have CMMS IQ's considerably in excess of their WISC IQ's. For all mental ages, the CMMS is a satisfactory screening device if the CMMS cutting IQ is set low enough. A CMMS cutting IQ of 69 is recommended for economy of time.

ATTITUDES AND ATTITUDINAL CHANGES

The Effect of Socially Disapproved Labeling Upon a Well-Structured Attitude: A Repetition and Extension—Harry Aron, Sacramento State College.

Two experiments using 222 college students enrolled in beginning psychology courses attempted to assess the influence of labeling a well-structured attitude. Assumed preferred and opprobrious labels alternately prefaced empirically defined preferred and non-preferred statements. The subjects were asked to rate the statements publicly and privately.

It was argued that the label may be variously incorporated in rating the degree of agreement with a preferred statement. Several suggestions were held out to bring coherence to the noted behavior.

The general conclusion was offered that a label may have an effect on a preferred statement, though the nature of the effect is related to a series of factors which are currently not fully understood or isolated.

Developing an Inventory to Appraise Attitudes Toward Teaching—Norman D. Bowers, San Jose State College.

The primary object of this study was the construction and initial validation of an attitudes-measuring instrument, the *Teacher Opinion Inventory*. Two hundred

nineteen Likert-type attitude items were designed to differentiate among teachers on the basis of their satisfaction with teaching. These items were administered to a group of selected "better-satisfied" and "less-satisfied" teachers, and it was found that 113 items discriminated ($P < .20$) between the two diverse groups. An item response weighting method was also devised. The *Teacher Opinion Inventory* and other inventories were administered to a random sample of elementary school teachers. Correlations, significant at the one per cent level, were found between the *Teacher Opinion Inventory* and the *Hoppeck Job Satisfaction Blank* ($r = .729$) and the *Minnesota Personality Scale, Part V: Economic Conservatism* ($r = .283$). The product moment correlation with the *Minnesota Personality Scale, Part IV: Emotionality* was significant at the five per cent level ($r = .223$). The *Teacher Opinion Inventory* related to Principals' Rating I at the five per cent level of significance ($r = .223$), and to Rating II and the Combination of Ratings at the one per cent level ($r = .378$; $r = .465$, respectively). The *Teacher Opinion Inventory* scores discriminated ($P < .01$) between (a) groups of teachers who were members of their local teachers' association and those who were not; (b) the group whose members held office in their local teachers' association and the group of non-office holders; (c) the two groups whose self-ratings were at least one standard deviation above or below the sample mean; and (d) the three groups of teachers classified according to their current professional reading. These results were interpreted in terms of content, congruent and concurrent validity. The reliability of the inventory, as found by the method of analysis of variance was .958. Results indicate that attitudes toward teaching may be used as a measure of teacher satisfaction, and the *Teacher Opinion Inventory* is potentially useful in the selection of staff personnel and the measurement of teacher characteristics.

An Experimental Study of College Student Morale—Raymond A. Ezekiel, San Jose State College.

A 120-item experimental questionnaire form was developed and administered to 186 students and, following an item-validity analysis of the data, 89 items were selected to be included in the refined scale. The questionnaire was designed to include all the attitude areas which were felt to be salient in affecting student morale. The refined scale was administered to 155 freshmen and 155 senior students.

Freshmen students displayed a statistically significant higher level of morale than senior students. Response tendencies for every item on the questionnaire for every subject were tabulated to provide further insight into the sources of this difference in morale level. The reliability of the scale was .92.

A Study of Teachers' and Psychologists' Ability to Predict Seventh Graders' Opinions of Certain Behaviors of Their Peer Group—Stanley Goertzen, Alameda County Schools.

The purpose of this study was to determine the ability of three groups to predict how seventh grade children rate and rank a list of 32 neutral and negative behaviors. The total children's group ratings and rankings are compared to those of a seventh grade teacher group and a school psychologist group who were asked to predict how seventh grade children would rate these items. Another seventh grade teacher group was asked to answer the opinionnaire from the standpoint of their personal reaction to seventh graders who exhibit these behaviors.

In all the groups' rankings there is great congruence. The teachers' groups are somewhat closer to the children's rankings than the psychologists are. It appears that these adults understand or feel with the children closely and/or feel toward these behaviors as the children do.

An Item Analysis of the Minnesota Teacher Attitude Inventory—Hazel M. Lambert, Fresno State College.

The low scores obtained by ninety-one students in the Arkansas Experiment in Teacher Education on the M.T.A.I. were indicative of poor attitudes toward teaching, according to the manual. Twenty-eight of the group were rated as

successful teachers after graduation. Sixty-three not yet graduated were rated as successful student teachers.

An item analysis of the 150 items of the M.T.A.I. gives some evidence that the low scores obtained were due to the students' answers being different from what was scored as "correct" in a matter of "degree" rather than in "kind." For example, on an item for which "strongly agree" is the correct answer, students answering "agree" were marked as being as wrong as those marking "disagree." On items for which "strongly disagree" is correct, those marking "disagree" are marked as wrong as those marking "agree."

Interaction Between Authoritarian and Non-Authoritarian Principals and Teachers—Philip Lambert, Orinda Union School District.

The purpose of this study was to investigate the behavior of authoritarian and non-authoritarian school personalities as expressed in group discussions of educational issues. The F-scale developed by Adorno and his associates was used to select extreme personalities. A sample of 294 elementary school teachers and 131 principals drawn from thirteen school districts was surveyed. From this sample forty teachers and twenty principals were selected. An equal number from each group was drawn from the upper quartile and from the lower quartile of the total distributions on the F-scale.

Each group discussed two educational issues. A recording device was used to preserve the discussion content. This procedure eventuated in the formulation of 20 protocols. These protocols were analyzed with respect to content. The major finding of this investigation is that authoritarian and non-authoritarian attitudes are present in discussion data generated by sophisticated educators.

Polling Parental Attitudes Regarding Their Children's Schools—James D. McAuley, Porterville School System.

A questionnaire (*Illinois Inventory of Parent Opinion*) was mailed to each family with a child in the elementary schools of the Porterville district. 1,000 or 60.2 per cent of the questionnaires were returned. The school district now knows in which areas its program is meeting with the parents' approval and which areas need to be reevaluated and improved upon. It also knows that from an over-all point of view, 82.9 per cent of those of its patrons who were concerned enough to reply are satisfied as opposed to the 2.2 per cent that are dissatisfied.

Many parents need more information concerning their child's school, according to the survey figures. A more direct public relations program is needed. Bulletins, letters from the teacher, and conferences with parents must be utilized by the school to educate the public and thus improve parental attitudes toward the school.

The Effect of Psychological Case Work on the Teacher's Concept of the Pupil—Virgil A. Revie, Alameda County Schools.

The process of a case study was investigated with Q-technique used to measure the teacher's and the psychologist's concept of the pupil. Both the teacher and psychologist change their concept of the pupil. Teacher change toward the psychologist's concept is greatest when the teacher and psychologist actively work out the findings of the study together and less when the teacher receives and reads the psychologist's written report. Generally, teacher-psychologist agreement on a concept is either present at the beginning of the study or is one result of a case study.

A Comparison of Teacher Characteristics Schedule Scores of Teachers Judged by Their Principals to Be (1) Outstandingly Superior or (2) Notably Poor—David O. Ryans, University of California, Los Angeles.

Validity extension of certain scoring keys of the Teacher Characteristics Schedule was attempted, employing criteria obtained by an "anonymous nominations" technique. Samples consisted of sixty elementary teachers, 138 mathematics-science teachers, and 141 English-social studies teachers. Thirty-four differences in score of Superior and Poor teacher groups were significant at or beyond the .05 level

(expected number, six). Differences significant at .05 level were most frequently associated with use of the Zco (stimulating teacher behavior), Yco (businesslike teacher behavior), Ico (verbal ability), Xco (understanding, friendly teacher behavior), and Rco (favorable teacher opinion of pupils) scoring keys, in order named.

Professional Self-Concepts of Psychologists—Harry Singer, University of California, Berkeley, and Elroy L. Stromberg (deceased), Western Reserve University.

A Thurstone multiple-factor analysis of intercorrelations of 12 Q-sorts was made to determine (a) whether professional self-concepts of nine graduate students in psychology would cluster into three subgroups which would coincide with the general, clinical and industrial divisions in which they were enrolled, and (b) whether their self-concepts would center around the professional self-concepts of their respective division chiefs.

The individuals clustered, however, into only two subgroups: general-industrial and clinical. But the students tended to center around their respective division chiefs! The *general-industrial subgroup* emphasized conventionality, conformity and confidence. The *clinical subgroup* stressed interest in and acceptance of people, self-criticism and dissatisfaction, and less conventionality and conformity. However, a Pearson r of .75 between subgroups indicated similarity in self-concepts.

Seventh and Eighth Grade Students' Reactions to Instruction Concerning Effects of Narcotics—Denzil E. Widel, San Lorenzo School System.

An experimental study to determine the effectiveness of a unit of instruction on narcotics in regard to (1) information concerning narcotics, (2) attitudes and attitude changes, (3) sources of the pupils' information prior to the unit. The investigation was based upon the reactions of more than 800 seventh and eighth grade students over a six month period.

Conclusions: (1) Students obtain information concerning narcotics from a variety of sources and indications are that out-of-school influences far exceed those of the school. Television, newspapers, and parents rank high as outside sources of information. (2) Narcotics instruction is effective in teaching seventh and eighth grade students general information concerning the subject and effects of narcotics. (3) Narcotics instruction is effective in changing some attitudes concerning narcotics and these changes persist over a period of time.

INSTRUCTION

A Comparison of the Reading Proficiencies of Normal-Progress and Reading Disability Cases—Mary W. Bowers, Cupertino Union Elementary School District.

This study attempted, by comparing normally progressing readers and poorly achieving readers, to find the place of individual diagnosis. Two theories are currently in conflict regarding the nature of instruction in reading. One advocates using diagnostic tests to guide remedial instruction. The other theory assumes that if the level of reading skill of the reader is first determined and instruction is offered appropriate to that level, then remedial reading can be successful.

A sample of sixty-four pairs matched on four critical variables was used. Each pair was composed of one retarded reader, and one child who was making normal progress in reading. All children were tested with three diagnostic reading tests. Appropriate tests of significance were employed to analyze the data. The data indicated that two readers having the same total reading score may possess widely varying reading abilities. Therefore, the use of diagnostic tests with retarded readers has worth and can be helpful to the classroom teacher.

A Study to Determine the Relation Between Reading Ability and the Visual and Auditory Vocabulary Development of Children Beginning to Read—Marilyn Tyler Gaddis, Claremont Graduate School.

It was the problem of this study to determine the relation between reading ability and the visual and auditory vocabulary development of children who are beginning to read. For the purposes of this study, 79 children enrolled in the first grade for the first time were selected (from the Pomona City Schools). The socio-economic community which these children represented is a typical cross-section of many American communities. Two reading tests and teacher rating of reading ability were treated statistically with the auditory and visual administration scores on the Stanford-Binet Vocabulary Test.

It is believed to be significant that there was a relatively high correlation between the reading tests and the auditory administration of the vocabulary list. However, an even higher correlation was found between the reading tests and the visual administration of the vocabulary list. The coefficients of correlation obtained were all significant at the 1 per cent level (for an N of 79) except for two.

Variations in Number Symbols and Instructional Procedures in Learning Numerical Concepts—Bert Y. Kersh, University of Oregon.

The effectiveness of two methods of representing number (concrete and abstract) was compared in the learning of rules of addition under four different conditions of teaching. The teaching conditions ranged from requiring students to discover the rules to requiring them to memorize them. High school students were used. No one form of numerical representation resulted in the best learning for all methods of teaching. The use of "concrete" numerals resulted in superior learning in the groups that memorized the rules. The groups that memorized the rules performed better immediately following the learning period, but four weeks later their performance level was equal to the other groups.

Growth of the Sight Vocabulary in First Grade—Vivian J. Meeder, Claremont Graduate School.

The vocabularies of twenty-one pre-primers of seven series of basic readers have been compared. It has been observed that they have an aggregate vocabulary of 835 words which reduces to a combined vocabulary of 153 words when all repetitions are omitted. The ratio of new words to running words is approximately one-fifth that of a single series. "Drill" is "built in" through repeated use of the words in meaningful context. The child learns to read by reading.

The books have been organized for teaching purposes in relation to the per cent of the combined vocabulary they teach. This organization is especially adaptable to the needs of the rapid, average, and slow reader.

A Selection, Classification, and Comparison of Two Vocabulary Lists—Maurine Riley and Ida di Gesu, Claremont Graduate School.

The problem of these studies (two of a trilogy) was to design a systematic procedure for the selection of lists from an appropriate universe of commonly used words. The studies encompass two areas: (1) the obtaining of two samples of a defined universe of words, and (2) the comparison of those two samples.

The authors each selected lists by two methods from Webster's New Collegiate Dictionary. In one sample, every hundredth word was selected, resulting in a list of over 500 words. The other sample of over 900 words was selected by a random number method. The lists were classified and compared with each other and a third list. The studies seem to show that the two methods have produced representative word lists and that no significant difference is apparent between the two.

Differential Methods of Solving Selected Problems on the ACE Psychological Examination—Julius Sassenrath, Leone Anderson, Richard Rankin, Joy Richardson and Julius Thomas, University of California, Berkeley.

From a group administration of the ACE to 220 undergraduates at the University of California, a sample of 31 students was obtained who were in the upper or lower 10 per cent of the distribution on either the Number Series or the Figure Analogies subtests. Three easy, three medium, and three difficult problems, selected by an item analysis of these two subtests, were solved before the eye movement camera.

On number series problems only, high performers exhibit fewer fixations and regressions, as well as less duration of fixations and regressions, than low performers. The high performers place more emphasis on establishing the rule for the problem, while the low performers put more emphasis on looking to the options for clues to the answer.

The Effects of a Workshop on Certain Fourth-Grade Teachers' Skills in Teaching Music Reading—Rudolph H. Weyland, Tulare County Schools.

The effects of a semester-long workshop in teaching music reading were elicited "before," "during," and "after" from: (a) self-evaluation forms worked out by the nine participating fourth-grade teachers; (b) observation by the investigator and other qualified persons; (c) objective testing of these teachers and their students in necessary skills; and (d) evaluation of tape-recorded music reading lessons presented by the participating teachers to their students.

The results indicate statistically significant growth in music reading skills and in the teaching of these skills over a period of a semester. Some growth in music reading was indicated as a result of observation and testing of the students. There was, however, no significant growth with either teachers or students of an equated control group. The results of the experiment amply justify a workshop of this nature as an effective in-service program in this phase of music education.

Differences in Achievement Attributable to Different Educational Environments—J. A. R. Wilson, University of California, Santa Barbara.

This study was undertaken to particularly answer the question: How do American and Canadian schools compare? The California Achievement Tests, California Personality Test, and SRA Primary Mental Abilities Test were administered to all beginning third grade students in _____, California, and _____, British Columbia. Tests were administered during the last week of September and first two weeks of October, 1955. Pertinent factors in educational environment were checked. The distribution of time for learning activities was found to be the same in both systems.

It was concluded from the findings that: (1) British Columbia performance was better than California performance. (2) Further testing should be used to study this topic. (3) National Norms are too low to serve as levels of aspiration. (4) Teacher training institutions should re-examine their programs with a view to improving the effectiveness of primary teachers.

THE EXCEPTIONAL CHILD

A Study to Determine the Home Conditions and Influences Which Seem to Be Associated with High School Leadership—John A. Barr, San Jose State College, and Kenneth H. Hoover, San Francisco State College.

Selected subjects were divided, by sex, into leader and non-leader groups. Areas of investigation included a comparison of the groups in terms of family

methods and procedures relating to child training, family policy and control, family status, and certain miscellaneous problems.

Highly significant differences, favoring leaders, indicated that they had been subjected to ample praise and reasoning during the formative years; had performed amply work-assignments both in and out of the home; had assumed primary responsibilities of managing the home, for a week or more, prior to senior high school age; had regularly attended church, along with their parents, during the formative years. Also surpassing non-leaders, the leaders came from homes adequately equipped with recreational facilities and frequently opened to friends; they were interested in active as well as quiet activities and had been leaders in non-school groups by junior high school age; decision-making relating to moral standards, by the senior year in school, was usually left to the leader; family planning and sharing of decisions were common practices in the homes of leaders; their parents were generally professional or skilled workers rather than unskilled; the fathers of the girl leaders were usually home in the evenings; leaders had higher scholastic aptitude scores than non-leaders. A factor of marked significance, favoring leaders, indicated that leaders frequently earned spending money from outside employment in preference to a regular spending allowance.

Some factors were significantly associated with non-leaders. Those factors were: the parents preferred corporal punishment, as the chief corrective method, during the formative years; the subjects usually sought quiet entertainment; the presence of persons living in the home, other than members of the immediate family, was common.

A Two Year Study of the Intellectually Gifted Students in the Sacramento City Unified School District Senior High Schools—Gale Beeman, Edmund P. O'Reilly and Committee, Sacramento City Unified School District.

Major purposes of this study, made during the 1953-54 and 1954-55 school years, were to use a controlled method to identify intellectually gifted students, to determine the extent to which their needs were being met, and to evaluate whether the services of the Sacramento City Unified School District senior high schools could be made more effective or expanded, within the limits of feasibility, to satisfy any unmet needs revealed by the students. The report gives a summary of findings and recommendations.

An Analysis of the Observed Effect of Socio-Drama, Sociogram-Grouping, and Concept-Discussion on Eight Year Old Isolates—Ellen M. Clark, Oakland Public Schools.

Six eight year old identified isolates in an Oakland public school class were selected for observation in a study aimed at improving the social status of each. Selected stories emphasizing desirable behavior patterns were read. Discussions based upon an organized sequence of questions followed each story. Room and playground conflicts were solved by socio-dramas. All groupings were based upon information gleaned from sociograms. Significant observed behaviors were noted on each of the isolates. After one school year there was some evidence to indicate that the program (1) would keep an isolate child's status with his group from deteriorating and might improve his status, (2) would make the highly adjusted children very sensitive to the problems of others.

Provisions for Mentally Retarded Children in Selected Public Schools of the State of Washington—Charles Coffey, College of the Pacific.

The study concluded that there existed some confusion about the minimum admission standards in the public schools; decisions regarding admission, placement, and transfer were sometimes determined without sufficient objective evidence; most school districts studied required only a valid teaching certificate at the appropriate level, although hiring officials preferred that the teacher have courses in special

education and training at the primary level. Praise was considered far more effective than blame, scolding, or corporal punishment; most schools house classes containing from twelve to eighteen pupils; most plant facilities in Washington State do not differ markedly from those for regular classes; half the school districts have parent-teacher conferences on an organized basis and have established parent advisory groups; half the school districts receive "excess cost" support for special education classes; permissive legislation has made possible the beginning of intercommunity cooperation; and cost accounting is presently inadequate.

It was recommended that minimum admission standards be formulated by a qualified group of specialists with educators taking a leading role; school districts conduct comprehensive surveys to identify mentally handicapped and other handicapped children not in school and that they then be referred to special diagnostic clinics to determine their potential for training; diagnostic clinics for preschool children, with a special consideration for the offerings of related professions, should be supported by all persons interested in the welfare of the mentally retarded; provisions for pupils in rural areas be made through intercommunity cooperation; schools re-examine their methods; an internship for teachers at residential facilities be considered; modification of plant facilities and equipment be made to provide better educational services for the mentally handicapped; and that increased provisions for the counseling of parents of mentally retarded children be considered.

A Design for a Class of Emotionally Disturbed Children—Ernest Jackson, Guy Chapman, Max Cochran, William Hopper, Davis Levy, and Mildred Rodstrom, Visalia School System and Tulare County Schools.

The problem is to discover if group therapy in a public school setting can alleviate emotional problems of young children to such an extent that they can further benefit from regular classroom experience, or show increased behavior adjustment. In this design an attempt is made to determine the methods and techniques that can be developed in an educational setting to bring about more positive behavior adjustment.

The children would be screened by a social worker, psychologist, pediatrician, and a psychiatrist. An experimental and a control group would be set up, matched for age, sex, IQ, socio-economic factors. Parent participation in weekly sessions would be required. A trained group psychotherapist would hold daily therapy sessions with the experimental group of children, ages 5 through 8 years.

Parents' Satisfaction and Problems in Rearing Gifted Children—Nathan S. Leichman, University of Southern California.

The purpose of this study was to determine what satisfactions and problems are associated with the rearing of mentally-accelerated children, and to draw educational implications from these findings which might increase the effectiveness of our curriculum planning for the mentally accelerated child. Parents of 50 mentally accelerated children were paired with parents of a comparable group of average-ability children and recorded interviews were made with both sets of parents. Statements in the transcribed interviews were analyzed and classified into 17 major categories with 87 items. Responses were tallied and the level of significance of difference between parents of the two groups was based upon the critical value of r for the sign test.

Some of the findings are reported: (1) Parents of mentally accelerated children report problems and satisfactions more frequently than those of average ability children. (2) Parents with more education seemed to have more understanding of their children's behavior. (3) The higher the IQ of the child the more were satisfactions reported. (4) Parents with mentally accelerated children $11\frac{1}{2}$ years or younger indicated more problems than parents of average ability children of the same ages. This difference was nonexistent where parents of children 13 years or older were compared. Conclusions regarding a program of conferences with parents were outlined.

Success of Elementary Pupils Admitted to Public Schools Under the Requirements of the Nebraska Program of Early Entrance—Karl J. Mueller, San Jose State College.

The purpose of this study was to determine whether children, who on the basis of a psychological examination were admitted early to kindergarten, have been able to adjust as well academically, socially, and emotionally as those who were admitted regularly, as those who failed to meet the examination criteria, and as those who did not avail themselves of the opportunity to take the examination.

Chi-square analyses demonstrated that the early entrants were rated above all other pupils on all traits, that those who failed to be admitted early were rated not significantly different from regular pupils, and that those who did not attempt early entrance were rated above regular pupils on all traits but those exemplifying emotional maturity.

SPECIAL TOPICS

A Critical Comparison of Certain Music Aptitude Tests—Richard R. Bentley, Napa Junior College and High School.

The purpose of the study was to determine the music aptitude tests that best predict or evaluate the presence of musical talent. Five new standardized tests published during the past five years were selected for the study: (1) *The Farnum Music Notation Test*, (2) *Music Talent Test* of Jacob Kwalwasser, (3) *A Test of Musicality* by Gaston E. Thayer, (4) *Musical Aptitude Test* by Harvey S. Whistler and Louis P. Thorpe, and (5) *Tests of Musical Ability and Appreciation* by Herbert Wing.

No conclusions based upon the experimental data are possible concerning the relative merit of different theories of test construction. Documentary analysis of the literature supports a concept in which musicality is made up of complex independent abilities centered around a general factor. The reliability of the Kwalwasser and the Whistler-Thorpe tests is subject to question. All five of the tests appear to be valid by the three criteria of this study.

A Study of the Value of Psychological Case Studies—John R. Broe, Ventura County Schools.

In the fall of 1954 a measurement was made in a 75-faculty high school district on how much case study information high school teachers are utilizing. One hundred and twenty-five students, representing low ability, behavior disturbances and personality disturbances, were followed up. Thirty-five per cent of the teachers questioned had received case study information. Of those teachers, 92 per cent found the information helpful in understanding the students. Of these same teachers, 76 per cent were better able to provide for the needs of the students.

Teachers who had received the case study information and those who had not received it were compared in how much improvement they saw in the students' behavior. Ninety-two per cent of the former saw general improvement; whereas, only 13 per cent of the latter saw general student improvement.

Survey of Elementary School Library Practice—Kenneth R. Brown, California Teachers Association.

At the close of the 1954-55 school year the CTA Research Department conducted for the School Library Association of California a general survey of current elementary school library practice. It was a status study which did not seek data or opinion on desirable library standards. The total of 193 returns included the identity of 123 districts and county offices.

The returns indicated the following: (1) *Library service plan*: two-thirds were a locally provided operation, and the remainder were operated under some kind of contract with an outside service such as a county superintendent's office, a county library, or a city library. (2) *Costs per a.d.a.* (excluding salary costs) ranged from \$1 to \$5 (30 of 62 central offices reported between \$1.50 and \$3). (3) *The librarian in the central office* had professional library qualifications, but on school library staffs degrees or credentials in librarianship were in the minority. (4) *Library housing facilities*: the typical elementary school library had little better than 50-50 chance of being used exclusively for library purposes. (5) *Book supply*: 42 per cent (of 116 replies) reported 5 or more books per pupil enrolled, and 44 per cent indicated 2 to 4 per pupil. Sixty per cent reported three or more encyclopedia sets, and about 30 per cent one or two sets. About one-third indicated less than 50 per cent non-fiction, with one-fifth reporting 75 per cent or more in non-fiction.

Application of Lord's "Estimated True Growth" Equations to Reading Test Data—John Caffrey, Educational Testing Service, Los Angeles.

New regression equations, due to Frederick Lord [Educational Testing Service, Princeton, N. J.], provide estimates of "true growth," when scores on the same or parallel tests given before and after a learning interval are available, and for estimating the reliability of these gains. A full treatment, with derivations, will be published by Lord within the year. Permission to use and present these equations, available now only as a draft for ETS use, at the 34th annual CERA Conference was granted by Lord. Simplified equivalents of certain of Lord's equations were presented there, but no attempt was made to provide anything more than computing procedures and illustrations.

For 360 randomly selected Los Angeles county children, 1954 and 1955 reading scores (vocabulary, comprehension, and total reading) on two forms of the *California Achievement Test* were analyzed. The entering data for Lord's equations were the means and variances, covariances and correlations, and the reliabilities and error variances of the test scores.

Sums and other entering data, as well as the regression equations were given as an illustration of and check on the computational procedure. As Lord has pointed out, the reliabilities of the "true growth" estimates were carefully noted. Most revealing (if not positively dramatic), however, was the graphic presentation with "gain" (or "loss") lines plotted on an equation. Each diagonal line represented a certain estimated true gain (or loss) for X and Y scores intersecting at or between these lines. It was noted that there were some surprising differences between the apparent growth (arithmetical difference between two scores) and the estimated "true growth" computed by another equation. A line of "apparent zero gain" crossed a region from positive to negative estimated "true gains."

Lord's technique, which can be adapted readily to the longitudinal processing of test data, offers a healthy antidote to the usual growth-tracking or growth-guessing approach via arithmetical differences between scores. Test data punched in IBM cards can be processed in simple IBM computing machines (e.g., the 602-A); in other cases, the use of a graph is both simple and sufficiently accurate for almost any except precise research applications. Lord cautions those interested in practical applications that reliabilities below .60 should discourage one from an exaggerated faith in the growth estimates.

Changing Authoritarian Attitudes—W. Edgar Gregory and Jenean Frane, College of the Pacific.

The Mental Hygiene class at the College of the Pacific has been oriented toward developing non-authoritarian attitudes by calling attention to the handicaps of the authoritarian (or rigid) personality. The class was, however, given the California F scale (authoritarianism) at the beginning and end of the semester and changed only 5.06 points during this term. A general psychology course, taught by the same instructor, was also tested and increased .73 points. A critical ratio of 3.00 was obtained indicating that the decrease in authoritarianism for the Mental Hygiene students was not statistically significant. This would seem to indicate that specific instruction in non-authoritarian attitudes does not significantly

develop those attitudes. Other means must be found, if these attitudes are to be changed.

An Abac for a Graphic Estimate of the Amount of Systematic Error in Estimates of Item Difficulty Obtained from Use of Upper and Lower 27 Per Cent Criterion Groups—William B. Michael, University of Southern California.

Theoretical results indicate that an estimate of item difficulty based upon the mean proportion of individuals in the upper-and-lower 27-per-cent criterion groups who respond in a designated manner will be less than the level of item difficulty for a total criterion sample when this latter measure is less than 0.50. It will be larger when the latter exceeds 0.50. If the tetrachoric correlation between these variables is obtained, an abac can be made consisting of two families of curves in this correlation and in the total-sample-criterion variable. This abac will show on its ordinate the amount of systematic error arising in the use of criterion-variable values in place of sample-variable values. From a knowledge of the criterion-variable values and the tetrachoric-correlation values, it is also possible to determine sample-variable values. (The examples prepared by the author are not included here due to lack of space.)

The Use of Original Story Material as a Projective Technique—Priscilla Holton Neff, Pomona City Schools.

This creative experiment was an exploratory attempt to discover new ways of understanding the needs of pre-adolescent children. The writer prepared an original story (later published as *Little Miss Callie* by Longmans, Green in 1955) for use with a group of sixth grade children. Imaginary situations and adventures which the children had revealed as most meaningful to them were developed through a variety of projective techniques. In reporting these projections, the teacher discovered how the children felt about themselves; their thoughts, their inner needs and questions about growing up. The following feelings were discussed freely and satisfactorily solutions projected: how to treat an emotionally disturbed person, how it feels to be alone, rejected or strange; how important it is to be happy. Most of all, how to be tough-minded and tender-hearted. Their response to this experiment implied that these children were better prepared to understand themselves.

Pupil Turnover in the Oakland Public Schools—Carl R. Quellmalz, Oakland Public Schools.

The effect of high population mobility in the Bay Area on public school enrollments in Oakland was studied by tabulating child accounting data. Pupil turnover for each grade level was computed by dividing the sum of the gains and losses in enrollment (from all causes) by the average enrollment.

During the school year 1954-55 the turnover for the elementary schools was 107.1 per cent, for junior high schools it was 115.1 per cent, and for the senior high schools it was 112.3 per cent. Data for the preceding four years yielded comparable results. The net gain in enrollment at each grade level was found to be only a fraction of new enrollments to the school system.

Relationships Between Selected Characteristics of Children and Their Television Viewing—Lloyd F. Scott, Walnut Creek Elementary Schools.

The purposes of the study were to determine whether relationships existed between the amount of television viewing of sixth and seventh grade children, both total and educational, and (1) their achievements in reading, arithmetic, language and spelling, (2) their intelligence quotients, (3) occupations of their parents, (4) educational and leisure time interests and (5) their personal and social adjustments.

Results of the study, conducted in the San Leandro, California, Schools, showed that there was a significant relationship between heavy television viewing and the following: (1) low achievement in arithmetic, reading and total achievement; (2) low language intelligence quotient and total intelligence quotient; (3) lower parental occupational level. No relationships were found between total viewing and other characteristics. No relationships were discovered between educational viewing and these characteristics of children.

The General Factor in School Achievement in the Junior High School—Fred T. Tyler, University of California, Berkeley.

The Stanford Achievement Tests and a general intelligence test were administered to 60 boys in grade VI and again in grade IX. Forty-five were 11 years old in grade VI and 14 in Grade IX. Centroid factors and "g" loadings were extracted from the tables of intercorrelations at grade and age levels. The loadings on the first common factor and on the general factor accounted for about 70 per cent of the total variance. The percentages were slightly larger for the data from the second administration, consistently favoring the hypothesis of integration rather than of differentiation of mental abilities with an increase in age and in schooling.

Survey of Student Teaching Activities at San Jose State College—Robert A. Weber, San Jose State College.

The study was aimed at identification of some major aspects of student teaching. The sample was comprised of fifteen student teachers located in ten schools in four districts. Data were collected by daily diaries which indicated the activities undertaken, student opinion regarding the activities, time spent, and new activities added each week.

The results indicate most student teaching activity is aimed at acquiring proficiency in classroom performance; students believed most activities were valuable; average time spent weekly was 32.5 hours; about one-half of all activities undertaken during the semester were encountered during the first two weeks; and teaching in two classrooms during the semester does not appreciably enhance the experience.

The American Technical Society has just published a "Building Trades Blueprint Reading Examination Kit." As the Society states, "This material was prepared for use with pre-apprentice, apprentice, and trade extension classes in the building trades. It was prepared in cooperation with the Instructional Materials Laboratory, California State Department of Education." The author is William Wolthes, Coordinator, Woodworking Trades, Los Angeles City Schools. The kit is made up of six full-size houseplans reproduced in a blueprint form, one standard specification form, and an eight-page comprehensive examination. The publishers state that, "Naturally, the over-all purpose of the examination is to test the student's general knowledge of building practices and his ability to read and interpret blueprints." However, it has many additional uses in their opinion. The kit may be obtained for \$1.50 from the Society, 848 East Fifty-Eighth Street, Chicago 37, Illinois.

Miriam L. Goldberg, research associate, Talented Youth Project, Horace Mann-Lincoln Institute of Experimentation, emphasized the need for new vocabulary in describing methods of making provisions for gifted students. "Enrichment" is a very poorly defined word educationally. "Segregation" is an emotionally loaded word which is largely obsolete. Her discussion appears in the April, 1956, issue of *Exceptional Children*.

Book Reviews

EDUCATIONAL PSYCHOLOGY IN THE CLASSROOM

HENRY CLAY LINDGREN

New York: John Wiley and Sons, Inc., 1956. 521 pages. \$5.00.

"... what the psychologist is telling us, among other things, is that there are no simple explanations to human problems and that there are probably no simple solutions." This statement, found near the beginning of Chapter Eight, points up the dilemma of the author who writes a psychology textbook for teachers. The teacher needs and is looking for specific remedies for specific problems. The psychologist can give no advice which will apply in all situations of even a very limited type. On one hand, books on educational psychology deal so generally with theory and with laboratory-type situations that they have little bearing on classroom problems; on the other, they become so devoted to actual situations that they are mere anecdotal records. Dr. Lindgren has made a valiant attempt to steer a middle course between these extremes. He has not succeeded in all aspects, but he has not done badly.

The frequent use of anecdotes and examples makes the book fresh and interesting and gives it a flavor of realism that should appeal to both actual and prospective teachers. Theory is not neglected and it is presented in a non-dogmatic way that is very attractive. However, the student who wants final answers and definite rules will be unhappy. It may be that some will even find parts of the book confusing. On the whole, though, the author is to be commended for making a strong effort to write a text that will force students to do some degree of scientific thinking rather than memorization of the author's predigested information.

The book is comprehensive and would form a valuable addition to a professional library. It is to be hoped that it will also get a thorough try-out as a college text.

FUNDAMENTAL STATISTICS IN PSYCHOLOGY AND EDUCATION

J. P. GUILFORD

New York: McGraw-Hill Book Company, 1956. 565 pages. \$6.25.

This is the third edition of a text that has been standard in many schools of education since 1942. The author is Professor of Psychology at the University of Southern California, and the book shows the influence of both

his understanding of psychological principles and his experience as a college teacher. Although mathematically sound, the text does not go into the theoretical principles underlying the statistical methods presented. But it does explain in terms of actual applications exactly what can be done with statistics.

Dr. Guilford does not assume that his readers have much mathematical or arithmetical know-how before beginning the study of statistics. The early chapters of the book constitute a gradual introduction into the field of measurement and its interpretation. All students except those who have the strongest conditioning against figures should be able to follow the text with relative ease. The examples at the end of each chapter should help in making the student confident because of their practical and relatively simple nature.

The chief criticism of the book is that it tries to cover the whole of the field of statistics. In the latter chapters such topics as the analysis of variance and factor theory are covered. This makes the volume rather thick and, more serious, it tends to frighten the beginner who looks ahead to see what is coming. On the other hand, it enables the student of education and psychology to obtain with a single purchase, both a simplified text and a comprehensive reference book.

Because of its clarity and comprehensiveness, this book would seem to be an excellent choice for the researcher's reference library or for the professional libraries of school districts.

HOW TO EDUCATE THE GIFTED CHILD

A Collection of Practical Suggestions
by the Metropolitan School Study Council Committee on Exceptional
Children and the Editors of Exchange Magazine. 60 pages. \$1.00.

This small book gives a refreshingly temperate and down-to-earth review of provisions for superior students in elementary and high schools. The bulk of the volume is devoted to a description of actual devices and procedures now being used in the New York metropolitan area. The book concludes with a "Teacher's Checklist for the Identification of Gifted Pupils" and a brief bibliography. The checklist should prove helpful to many readers if it is used as recommended. The publication may be obtained from the Metropolitan School Study Council, 525 West 120th Street, New York 27, New York.

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